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IMPROVING THE PRINCIPAL'S EFFECTIVENESS THROUGH ORGANIZATIONAL BEHAVIOR MANAGEMENT (OBM) PROCEDURES: GOAL SETTING AND PERFORMANCE FEEDBACK

A Dissertation Presented

by

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ABSTRACT

IMPROVING THE PRINCIPAL'S EFFECTIVENESS THROUGH ORGANIZATIONAL BEHAVIOR MANAGEMENT (OBM) PROCEDURES: GOAL SETTING AND PERFORMANCE FEEDBACK

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This research tested the application of organizational behavior management (OBM) procedures in order to improve principals' effectiveness and teachers' and students' performance. After establishing baseline rates for: 1) principal and teachers' verbal praise, non-verbal feedback and goal setting and, 2) academic performance of students, in three classes in two schools (one, elementary school, the other, secondary), treatment conditions were introduced in two different experimental designs: single-subject reversal design and multiple-baseline across-subjects design. During the intervention phases, the rates of praise, feedback and goal setting increased, as well as the academic performance of the students. The principals' effectiveness with an important instructional leadership skill was demonstrated. The results suggest that the behavior of principals and teachers may change positively after the application of OBM procedures and may positively impact upon students' performance.

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CHAPTER I

INTRODUCTION

Over the past years research has been conducted which describes effective schools (Brookover and Lezote, 1979; Venezky and Winfield, 1980; Phi Delta Kappan Study, 1980; Edmonds, 1979). A recurring theme from the research is that principals of effective schools tend to be strong instructional leaders who are perceived as playing a crucial role in influencing their schools' achievement. Further studies of effective principals corroborate the findings (Blumberg and Greenfield, 1980; Rosenblum and Jastrab, 1980; Leithwood and Montgomery, 1982; Little, 1982; Snyder, 1983). They describe how principals exercise their leadership to influence the instructional program, and indicate that principals can make a fundamental difference in the performance of a school by involving staff members in school improvement planning, specific teacher and program development and in careful assessment.

Based upon the studies mentioned above, this writer concludes that effective schools have effective leaders and that much of what the school does to promote achievement is within the principal's power to influence and control. Specifically, there are leadership behaviors documented that have been consistently associated with schools that are well-managed and whose students achieve. Some of the above

are: emphasizing achievement; providing an orderly atmosphere; evaluating student progress; supporting teachers and coordinating instructional programs.

Writings of many other researchers (Kroaze, 1984; McIntyre and Morris 1982; Seifert and Beck, 1981; Zaleznik, 1977) underscored the discrepancy between the perceptions of the principal as an instructional leader as perceived by the school superintendents and boards of education and that of teachers who often view the principals, not as instructional leaders, but rather as school managers. The existing data tend to support the teachers' view. Still further research on the principalship document an inordinate amount of time by principals spent on non-instructional activities. A national survey on the secondary principalship by Byrne, Hines, and McLeary (1978), pointed out that even if program development is ranked first in importance by principals, the largest portion of their time is actually spent in what principals themselves have enunciated as the less important functions of school management: personnel activities, student activities, and student behavior. Peterson (1977) found that principals spend less than 5% of their time in classrooms and that the planning and coordinating of curriculum and instruction consume less than 6% of their time.

More specifically, research studies (Howell, 1981; Wolcott, 1983; Peterson, 1977), reveal that principals engage in activities that are short, highly varied, change frequently, and they must often change gears since many of the activities are initiated by others. Indeed, the fact that many of the activities or interactions are initiated by others may be at the core of the problem. Principals tend not to control their time, especially if they do not have assistants. Rather than being proactive in their use of time, principals allow themselves to be reactive. For instance, the principals' most carefully laid plans often are interrupted by irate parents, disruptive students, minor problems in the hall or by teachers. The principal must react to those situations and, as a result, good plans or intentions or well-planned activities are postponed. Very often, unfortunately, these "intentions" include activities devoted to instructional leadership (like supervision, observation of classroom instruction and/or staff development). In short, the problem, is that the principals become followers (of internal or external events and rules) instead of educational leaders in a pro-active style.

The purpose of this research was to try to improve principals' effectiveness in terms of their instructional leadership roles. To accomplish this task, the researcher has applied methods based upon Organizational Behavior Management (OBM). This decision, to utilize OBM techniques

for principals' behavior, has stemmed from the contributions of OBM to managerial effectiveness: "The field of OBM consists of the development and evaluation of performance improvement procedures which are based on the principles of behavior discovered through the science of Behavior Analysis. The goal of the field of OBM is to establish a technology of broad scale performance improvement and organizational change so that employees will be more happy and productive, and so that organizations and institutions will be more effective and efficient in achieving their goals". (Hall, 1980).

Two interventions employed frequently by practitioners of OBM involve various combinations of performance based feedback (behavioral data provided to the subject) and goal setting (the establishment of behavioral targets). Variations of this package have been investigated widely in business, industry, and human service settings.

Performance feedback, which has been defined as information provided to individuals about the quantity or quality of their past performance (Prue & Fairbank, 1981; Chandler, 1977), is a widely used procedure in organizational behavior management research. In a review of the first five volumes of the Journal of Organizational Behavior Management, Balcazar, Hopkins, and Suarez (1984) found that some form of performance feedback was used in 60%

of the articles. Much evidence suggests that feedback is effective. programmatic simplicity, low cost and, flexibility have made performance feedback an attractive procedure (Fairbank and Prue, 1982). Additionally, performance feedback has produced improvements in a variety of organizational areas, such as: tardiness and absenteeism (Lamal and Benfield, 1978), customer service (Brown, Mallott, Dillon and Keeps, 1980) and, safety (Sulzer-Azaroff and deSantamaria, 1980)

Goal setting has been found to be an effective approach for improving a number of areas of educational performance (e.g. Latham and Yukl,1975). In general, goal setting entails specifying a level of performance toward which the individual or the group plans to work. As the theory of goal setting states: "An individual's conscious goals regulate his/her behavior; hard goals tend to produce a higher level of output than easy goals and, specific hard goals lead to a higher level of output than an abstract or generalized goal of "do your best"." (Locke, 1968)

Goal setting and feedback can be combined to successfully change managerial behavior. The effects of performance feedback and goal setting on organizational behavior have been demonstrated in a variety of human service settings across a broad spectrum of behaviors and with subjects differing on a number of important dimensions

(Frederiksen and Johnson, 1981; Kim and Hammer, 1976; Ivancic, Reid, Iwata, Faw and Page, 1981). It is not surprising that a combination of goal setting and feedback has been found to be more effective than either goal setting or feedback in isolation, by the principal alone. The combination of goal setting (antecedent) and feedback (antecedent and/or consequence) should result in the establishment of behavior under stimulus control and consequently an increase in performance levels. In order to establish stimulus control, behavior must be differentially reinforced (e.g. praised, supplied with feedback) in the presence of a stimulus (e.g. goal). If, indeed, optimal performance is achieved by using both goal setting and feedback, then it can be assumed to have come under stimulus control. Goal setting alone may be ineffective because the behavior of concern has not been adequately differentially reinforced in the presence of the goal. Similarly, feedback alone may be ineffective because its delivery has not been paired sufficiently with a reinforcing stimulus in the past.

As indicated previously, studies of observed managerial work suggest that principals spend a great deal of time reacting to immediate stimuli in the environment. A typical principal's day appears to be unstructured, filled with constant disruptions and distractions arising from a continuous round of personal visits, telephone calls, meetings and, incoming paperwork (letters, memos, reports,

reference data and so on). These constantly recurring activities appear to fill most of the principal's time. One of the possible answers to this issue can be Time Management.

As mentioned earlier, management is often characterized by: "a series of interruptions interrupted by other interruptions". Finding sufficient time to complete all the routine tasks that must be done in addition to "putting out all the daily fires" can be both difficult and demanding. Since most of a manager's day is unstructured, with various blocks of discretionary time and an equal variety of discretionary tasks, matching tasks and time can be one of the most important functions managers can perform for themselves. Hanel, Martin, and Kook (1982) corroborate the previous findings by emphasizing that: "Time management deficiencies of managers are characterized by the following typical situations: short-term crises manage the day; much time is wasted in meetings; frequent work interruptions occur during the day; disorganized work areas and filing systems are evident; authority and responsibility are delegated inappropriately and managers appear to be constantly busy but accomplish little."

According to Hall and Hursch (1982) effective time management consists of using procedures which are designated to help the individual to achieve his or her desired goals.

In general terms, effective time management means the right task is performed at the right time, work is organized and progressed at comfortable pace, and most important - individuals' nonverbal behavior matches their verbal behavior (i.e. actual work matches the plans of the person). Basic procedures include specification of behavior (planning), observation (measurement of time use) and consequation (feedback and reinforcement).

Although, as indicated before, considerable evidence has demonstrated the successful application of OBM in business and industry. More recently, OBM principles increasingly have began to serve a significant role in improving the effectiveness of educational and other human service agencies. (Andrasik, 1979; Riley and Frederiksen, 1984). As emphasized by Sulzer-Azaroff (1983) : "Behavior modification has been contributing toward making educational systems more effective and satisfying to students and school personnel." Many studies have been conducted to improve classroom management and/or teaching skills but only few have demonstrated that the principal can use ABA or OBM approaches in the field of educational administration. (Brown, Copeland and Hall, 1972; Copeland, Brown, Axelrod and Hall, 1972; Maher, 1981; Nau, O'Neil and VanHouten, 1981; Souweine, Sulzer-Azaroff and Frederickson, 1977).

As suggested earlier, the primary purpose of this research was to provide a better understanding of the interaction between OBM procedures, such as: goal setting and performance feedback and educational administrators. While no single, commonly agreed upon definition of effective principals exists, both researchers and practitioners generally identify effective principals partially on the basis of organizational performance such as student performance scores. In other words, as Manasse (1982) stated in her research: "There is often agreement among the various data sources that when certain principals are effective, the students in their schools perform well, academically..." Assuming the principals' main task is to encourage and to enable learning, OBM procedures may be applied toward structuring principals' work in order to promote the effectiveness of the learning-teaching process. Measures of the learning-teaching process will inform teachers and principals about how well students are learning what has been taught in classrooms. Principals need to supply this feedback to teachers and students at the correct time while goal setting, can be related to students achievement and to performance of the professional school staff. Effective principals also can use goal setting to guide staff in identifying and analyzing different educational issues connected with planning and instruction. By having a clear vision of the school/class/students goals,

principals can set priorities so their time is not consumed only by administrative or maintenance tasks. The importance of goal setting to the effective principals leads to the other component of OBM: time management. By training principals to monitor their day-by-day activities, a better picture of their plans, priorities, expectations will be developed. During the process of weigh conflicting needs, matching resources with expectations and balancing all the priorities in the course of their daily interactions, principals can collect information and develop action plans and strategies to implement them properly.

Taking into consideration that OBM approaches such as performance feedback, goal setting, and time management are being used in a wide variety of organizations, it appears that OBM is moving toward increased acceptance and more widespread application in the educational settings, too.

Apparently, applying OBM procedures directed toward the process of educational improvement, by increasing the effectiveness of school principals, appears to be a promising direction to follow.

Research Questions

This research sought to assess the functional relationship between the principal's application of OBM methods and the performance of teachers and students. For

students, the research was limited to their academic achievement in math and reading.

Therefore, the research constituted an attempt to answer the following questions:

1. What is the effect, if any, of the principal and teacher's rates of goal setting, verbal praise and non-verbal feedback would there be, following the treatment conditions (OBM training sessions, and OBM procedures)?

2. If the principals and the teachers gave verbal praise, and non-verbal feedback and set goals for the students, to what extent would that affect the academic performance of the students in math and reading skills?

CHAPTER II

REVIEW OF RELEVANT LITERATURE

The Principal as an Effective Instructional Leader: Characteristics and Major Issues

One of the major barriers to effective instructional leadership is that principals often do not have a clear concept of their role and responsibilities. The professional literature emphasizes different aspects of leadership but, at the same time, groups and individuals who principals contact regularly may emphasize other aspects of the principals' job so, the confusion can be considerable. Therefore, the purpose of the review is to describe and discuss the characteristics of the effective school principal, including: instructional leadership, promotion of student achievement, organizational climate. Surveying the literature on the broad range of principal behaviors in the instructional area, this section will present some significant findings of effective schools / effective principals research as they relate to instructional leadership. In order to conceptualize the effective school leader, it will be helpful to discuss characteristics of ineffectiveness.

Specifically, this section will present:

1. An examination of the sources dealing with the

characteristics of effective and ineffective school principals;

2. A presentation of major issues such as: a) problems in the management process, and b) managerial skills, competencies and functions, which are characteristic of effective principals' involvement in the instructional area.

3. Summary.

Characteristics of Leadership

Effective leadership

Much research define the kind of person who is likely to be effective as a school administrator; the question of "what behavioral characteristics differentiate between effective and ineffective school administrators" began with the assumption that: there are several behavioral characteristics which can be described and which differentiate between effective and ineffective school administrators.

A reasonably extensive body of evidence gathered by many researchers through in-depth studies, support the proposition that the principal makes a difference in schools. Effective schools have effective leaders and much of what the school does to promote achievement is within the principal's power to influence and control. Specifically, there are some leadership behaviors that have been

consistently associated with schools that are well-managed and whose students achieve.

In his recent book, Benjamin (1981) summarized several characteristics of principals of effective schools. These principals:

1. Take strong initiative in identifying and articulating goals and priorities for their schools. They run the schools rather than allowing them to operate by force of habit.
2. Hold themselves and their staffs personally accountable for student achievement in basic skills.
3. Understand educational programs very well. They are instructional leaders rather than administrative leaders. Their first priority is instruction and they communicate this to staff.
4. Are highly visible in the classrooms and hallways of the schools.
5. Care more about their schools' academic progress than human relations or informal, collegial relationships with their staff members.
6. Attempt to "hand pick" their staff members. They put pressure on incompetent teachers to leave and find ways to reward excellent teachers.
7. Set a tone of high expectations for their staff and students.

Another study on school effectiveness was conducted by Edmonds (1978). He found that effective schools are marked by principals who:

1. Promote an atmosphere that is orderly without being rigid, quiet without being oppressive, and generally conducive to the business at hand.
2. Frequently monitor pupil progress.
3. Ensure that their staff are instructionally effective for all pupils.
4. Set clearly stated goals and learning objectives.
5. Develop and communicate a plan for dealing with reading and mathematics achievement problems.
6. Demonstrate strong leadership with a mix of management and instructional skills.

He concluded that principals and school leadership do make a difference and that there are some characteristics of effective schools indispensable to leadership.

According to Pinero (1982), evidence indicates that effective principals tend to be actively involved in their school's instructional program in several ways. Specifically, effective principals:

1. become knowledgeable about instruction, especially in relation to basic skills.
2. set clear goals for the school's instructional program

and announce these goals to students, faculty, and the community.

3. set high expectations for the behavior and achievement of students.

4. set expectations for collegiality and continuous improvement and model desired behavior.

5. participate with teachers in inservice activities.

6. insist on giving priority to instructional concerns by, e.g., concentrating time and effort on instructional matters and delegating as many noninstructional tasks as possible.

7. make instruction and its improvement the central concern of the school.

Recent study on effective school leadership was reported by Sweeney (1982). In his opinion, there are six leadership behaviors of effective principals.

1. Emphasize achievement. They give high priority to activities, instruction, and materials that foster academic success. Effective principals are visible and involved in the school and its classrooms. They convey to teachers commitment to achievement.

2. Set instructional strategies. They take part in instructional decision-making and accept responsibility for decisions about methods, materials, and evaluation procedures. They develop plans for solving students' learning problems.

3. Provide an orderly atmosphere. They do what is necessary to ensure that the school's climate is conducive to learning: it is quiet, pleasant and well-maintained.
4. Frequently evaluate student progress. They monitor student achievement on a regular basis. Principals set expectations for the entire school and check to make sure those expectations are being met. They know how well their students are performing as compared to students in other schools.
5. Coordinate instructional programs. They interrelate course content, sequence of objectives, and materials in all grades. They see that classroom experiences have bearing on the overall goals and program of the school.
6. Support Teachers. Effective principals communicate with teachers about goals and procedures. They support teachers attendance at professional meetings and workshops, and provide inservice training that promotes improved teaching.

Summarizing the most common characteristics of principals based upon the studies mentioned above, effective principals tend to have high energy levels, to be willing to work long hours, to be good listeners and observers and to have well-developed expressive and interpersonal skills. They create images of their schools consistent with their visions. Then, using their understanding of the community and the organizational setting, they structure their work,

set priorities and adapt their leadership style to make their vision of their school into reality.

Several roles can be emphasized that link together to provide a framework for the major principalship tasks and functions, mentioned above and in many other studies.

The first role is to be a statesperson. As educational statespersons, principals are primarily concerned with their school's overall mission, philosophy, values, and beliefs as well as with the quality and relevance of the school's broad goals and objectives. They give attention to the school's overall educational program and broad design for schooling, ensuring that it reflects accepted values and goals. They work to communicate the school's mission to outside committee and/or superiors, seeking support and obtaining necessary funds. They also must accept responsibility for developing the educational policy of the school. (Benjamin, 1981; Jansen, 1967; Vaill, 1981)

The educational leadership role is the second role to be considered. This role is concerned with the actual development and articulation of educational programs and includes such concerns as curricular and teaching objectives, subject - matter content and organization; teaching style methods and procedures; classroom learning climates; student, teachers and programs evaluations. (Benjamin, 1981; Edmonds, 1979; Jansen, 1967; Sweeney, 1982)

Supervisory leadership is the third role. Principals work with teachers to obtain their commitment to agreed upon school goals and that facilitates their ability to work more effectively on behalf of those goals. The supervisory leadership role encompasses such concerns as staff development and clinical supervision. (Benjamin, 1981; Edmonds, 1979; Jansen, 1967; Park, 1982; Pinero, 1982; Sweeney, 1982)

The organizational leadership role is another important role because schooling takes place in an organized setting. Without attention to this important role, school can easily become comfortable bureaucracies, in which someone is apt to find that formal structure determines objectives and patterns of work. Effective principals express strong organizational leadership to ensure that school purposes, objectives and work requirements are these which determine school organizational structure patterns. (Benjamin, 1981; Edmonds, 1979; Jansen, 1967; Park, 1982; Pinero, 1982; Sweeney, 1982; Vaill, 1981)

The fifth role is administrative leadership. This role maybe the least "glamorous" among the others but nevertheless is very important; it seeks to provide the necessary support systems and arrangements intended not only to facilitate, but also to free teachers to devote increased time and energy to teaching and learning Poor organization

of work, mismanaged scheduling routines, unreliable technical services, supplies and equipment shortages, inadequate information are only few examples of obstacles to effectiveness and efficiency in schools. (Park, 1982; Pinero, 1982; Sweeney, 1982)

The sixth role for principals is the team leadership. As team leaders, the principals help develop a mutual support and trust among teachers, and between teachers and principals as they work together to build an effective school. (Park, 1982; Pinero, 1982; Sweeney, 1982)

Ineffective leadership

The problem of selecting school principals has bothered school superintendents and boards of education for many years. They find themselves in a state of indecision when forced to decide among some applicants for an administrative position. Sometimes they make mistakes - especially when no proven criteria exist regarding the characteristics necessary for effective school administration. Fortunately, more and more research is being aimed at defining the kind of person who is likely to be effective as a school principal.

Another important question is what behavioral characteristics differentiate between effective and ineffective principals. Three studies will be used to illustrate this point.

The first was designed by Brookover and his colleagues (1979). Based on two earlier studies, the purpose of this research was to emphasize differences in leadership in effective and ineffective schools. Findings demonstrated that leaders in the effective schools were more assertive, more effective, more disciplinarian and more inclined to assume responsibilities. Emphasis on instruction and student achievement was pervasive in their schools. Principals in the less effective schools behave quite differently. They were almost totally bogged down with discipline and administrative problems and showed little interest in instruction or achievement; the teachers in those schools seemed preoccupied with maintenance and survival. Brookover's insight into leadership differences in the schools is concise and straightforward: "lack of pressure relative to teacher performance and little emphasis on increased achievement appeared to differentiate low achieving schools from those more effective".

A study of the characteristics of principals of successful elementary schools was conducted by Goldhammer (1971). Less successful schools, were characterized by weak leadership, poor teacher and student morale, control by fear, traditional and ritualistic instructional programs, general lack of enthusiasm, and principals who were "serving out their time". More successful schools, by contrast, were characterized by high morale, enthusiasm and adaptability.

They were uplifting places to visit and inhabit. The principals of those schools were able not only to recognize problems but also to face them with inspiring leadership and hard work. They displayed leadership supported by a belief system, which included an overriding commitment to children, teaching, and teachers. They seemed to be following Peter Drucker's (1967) advice to concentrate "efforts and energies in a few major areas where superior performance produces outstanding results". They established priorities and stayed with priority decisions. They seemed to feel that they had no alternatives but to do first things first.

The third study was reported by Rutherford (1985). He discussed distinctions between more effective and less effective principals emerging from a five year investigation conducted by researchers from the University of Texas. Five essential qualities of effective and less effective principals were identified.

a. Vision: The principals were asked "what is your vision for this school, your long-range goals and expectations?" The effective principals began immediately to list their goals for their school and they responded with enthusiasm; they had clear informed visions of what they want their school to become, they focused on their students and their needs. The less effective principals responded after a long pause with non-specific statements and usually

in reference to specific goals that had been written to satisfy the supervision; they spoke without enthusiasm, without any vision for the school, focusing in the "here and now".

b. Translating the vision: When the principals had visions for their schools' future, usually their teachers described those schools as good places for students and for teachers and they were identified as the most influential in determining what happened in the schools. They translated the visions into goals for their school and expectations for their teachers or students. The teachers in the less effective schools spoke only about their work and their problems and the schools' problems. It appeared they lacked a common understanding of school-wide goals.

c. A supportive environment: The effective principals allocated funding and materials in ways that maximize teaching effectiveness and thus student achievement. They established a school climate that supported progress toward these goals and expectations. The less effective principals honored requests of support only when it was easy, without creating problems and without any real considerations of goals or expectations for school improvement or school effectiveness.

d. Monitoring: The more effective principals reserved time to know what was going on in the classrooms, so they could provide not only specific details about their teachers' performance but also insights into why the teachers' performed as they did. The less effective principals described the teachers' performance in a general way, without any insight about the daily behavior of teachers. Monitoring was an activity they carried out only superficially and they spent most of their working hours handling management or administrative tasks.

e. Interviewing: The effective principals looked for positive features and then raised and reinforced the teachers responsible for them. They also identified problems and engaged in necessary corrective actions. Because the less effective principals monitored in a superficial way, they lacked specific information about their school, they were unable to provide praise or support and identify and deal with problems unless those problems were obvious and/or pressing.

Summarizing these three important studies, all three corroborated the following behavioral characteristics of ineffective principals:

1. They formulate policies by themselves, regardless of results, such as low morale, ambiguity, etc.

2. They run the whole school by themselves, without any delegation of responsibilities.
3. They attempt to maintain outward calmness but they easily explode about trivial details.
4. Frequently, they repeat the same mistakes but, seldom admit it.

The clear conclusion drawn from these studies is that effective principals behave differently from ineffective ones. The results achieved in the effective schools are very well recognized by students, teachers and parents.

Another important conclusion is that even among themselves, effective principals are different because they are demonstrating different qualities of leadership during their work. For example, to establish a supportive school environment, one effective principal might work through a leadership team, while another might instead form functional faculty committees; a third effective principal might develop peer support teams among teachers, and a forth one might use a variety of techniques to develop a faculty-wide community. Other effective principals might support their good teachers through teaching assignments, class scheduling, and the allocation of such rewards as released time, purchase of special materials and supplies or public recognition and positive reinforcement for work well done. On the whole, all these effective principals are committed

to developing a supportive school environment, but their behavior by which each of them seeks to accomplish their goal might differ widely.

The fact that effective principals behave in different ways can be considered advantageous because it means that they do not have to change their personalities to fit some predeterminated patterns. Furthermore, it means that, as situations can change, principals can modify their behaviors accordingly and still retain their commitment to the effective leadership.

Issues in Effective Leadership

Problems in management

One of the major barriers to more effective performance is that educational leaders often do not have a clear concept of what they are supposed to do. For example: as Bogue and Saundres (1975) vividly described: "Some managers become absorbed in the doing of management; they begin to think of themselves as some magnificent combination of coach, quarterback, guard, halfback. They design the plays and also call the signals; they clear the way, tackle problems and run through the staff and the students." This concept of role mentioned above by these authors ignores the important fact that one cannot manage and operate simultaneously.

Another version of the ineffective manager is the one who expends his energy in managerial "clucking". The vision is a principal who rushes about in a frenzy checking locks on doors and forms in stock, and never gets far enough away from trivia to see if his organization is moving toward a healthy set of goals.

As a result of these issues, the performance of school principals is informally evaluated daily by the different individuals and groups with which they have contact. Furthermore, the basis on which their effectiveness is evaluated appears to differ from gruop to group. Students, parents, teachers, the upper echelons of administration observe principals in relatively different situations and because of these differences in the conditions under which they make their observations, they emphasize different aspects of the principal's job when they describe what they consider to be effective and/or ineffective behavior on their part. The problem is that everybody is quite willing to add to the list of the principal's responsibilities without inquiring about the current ones. As a result, often innovative instructional leadership (with all the supplementary components of time management, organizational climate, etc.) is shelved and replaced by the realities of personal survival and crisis management.

Managerial skills (competencies and functions)

As McIntyre and Morris (1982) concluded their article, it would be unrealistic to assume that principals would ever be in a position to give instructional improvement their number one priority . Nevertheless, a growing body of research shows a positive relationship between the leadership ability of principals and student growth in basic skill achievement. This means that if principals can improve their skills in and if their leadership efforts focus on the characteristics of effective teaching, one can anticipate more successful schools.

A major conclusion from the ESAA (Emergency School Aid Act) study appears to be that strength of administrative leadership is a major factor in the school's ability to improve student achievement. There is consistent evidence that improved achievement is likely to be found in schools whose principals: a) feel strongly about instruction; b) effectively communicates their viewpoints about instruction to teachers, through principal/teacher discussions, reviews of teaching performance; c) take a dominant role in decisions about the selection of instructional materials and in program planning and evaluation; and d) emphasizes academic standards.

Clearly, the business of creating an optimum learning and teaching environment is complex and demands of the principal a host of characteristics and competencies. In addition to the characteristics already reviewed in the previous stage the competencies outlined below apply to many principals.

LoPresti (1982) emphasizes some competencies that the school administrator must have to be an effective leader and to foster the appropriate learning environment. Among them:

1) A knowledge and ability to put into practice or help others put into practice effective classroom management techniques.

2) An ability to observe classrooms and provide constructive criticism and support to the teaching staff.

3) An ability to evaluate staff according to data gathered in a responsible and reliable manner.

4) A thorough knowledge of students' growth and development patterns.

5) A knowledge of learning theories and practices.

6) A knowledge of subject matter to such a degree that one can assist or find others to assist teachers in organizing content for the most effective instruction.

7) A knowledge of where to find answers or people to asisst with all educational tasks.

Other items could be added to this list but these are the competencies which focus on the learner, on educational theories, and on techniques that will assist the principal in serving as an educational leader among teachers and students.

Summary

This section cannot conclude with a set of prescriptions for effective principals. None of the research on principals reviewed has indicated that any one principal style is most effective. Actually, if the research is consistent on any point, it is that there is no single prototype of the effective principal. A crucial question can be drawn: if so many characteristics are so difficult to achieve effectively (maybe some of them do not really exist ?) what is the point of an hypothetical characterization of a nonexist leader ? The answer is that there are several possible uses of such a picture, as Mazzarella (1982) has clearly emphasized:

One may recognize potential leaders by determining if they have many (but not necessarily all) of these characteristics. Another is for evaluation - those who evaluate administrators can use this picture to help them formulate evaluation criteria. This can be used also for self-evaluation : those who are in leadership positions can compare themselves with more effective leaders to see how

they measure up. Also, knowing the characteristics of an effective leader can be useful in planning administrator training programs, as a guide to which aspects of the job ought to be emphasized. Finally, the most important use can be to help leaders set priorities. When things get rough and they are tempted to lock themselves in their office, such a vision can remind them that human relations and communication skills are important. When they are coasting along, day-by-day, not going anywhere in particular, it can remind them that being goal oriented and that knowing where they are going, do make a difference. In short, the most important use is the function performed by any ideal is that it offers something toward which to strive. Having a vision of where the school must go, can be very helpful in the process of priorities and goal setting.

The importance of the personal vision of the school is a recurring theme in studies of effective principals. On the basis of case studies of eight effective principals with different administrative styles and in various school environments, Blumberg and Greenfield (1980) concluded that the common elements of effectiveness are vision, initiative, and resourcefulness: "While they seem to hold fairly idiosyncratic perspectives toward their work world and while these viewpoints appeared to condition their manner and style of behavior as principals, all eight also: 1) desired and were eager to make their schools over in "their" image;

2) proactive and quick to assume the initiative; and 3) resourceful in being able to structure their roles and demands on their time in a manner that permitted them to pursue what might be termed their personal objectives as principals." Among many of the studies, articles, and books on effective schools and principals, this writer chose Blumberg and Greenfield's in-depth study of the eight outstanding principals as a model of excellence, especially for this conclusion.

The fact that the principals interviewed by those authors were more different than they were alike is not surprising. As mentioned before, this is positive. The personal vision of these effective principals helped them to set priorities so that they were not consumed by the organizational maintenance requirements of the job. They used their resourcefulness to avoid allowing themselves to become consumed by second-order priorities. A clear image of their school helped them, too, in making management decisions that promoted student learning and achievement. Appropriate management decisions to assign students to teachers and classrooms, to schedule and to allocate time to respond to staff proposals for experiment and innovation, to direct staff development, to observe and to evaluate teachers, to develop behavior and discipline policies, to schedule extracurricular activities - all of these activities can generate and sustain commitment on the part

of the students and the staff to the learning goals of the school.

By identifying strengths and potentials in their staffs, effective principals can provide learning opportunities and developmental experience for staff members while, at the same time, moving the operation of the school forward and freeing themselves to concentrate on high priority activities (i.e. using good time management). By integrating as many of their activities as possible toward their goals, the effective principals can influence the instructional program and the learning objectives.

Effective schools require a sense of purpose and direction provided by well-developed and clearly articulated goals. If the teachers are in control of the teaching activities in their classrooms, the principal is responsible for setting goals for the school as a whole and achieving concensus among the staff about these goals and priorities. To be successful in setting goals, the principal must first have a vision: second, the principal needs the analysis and intellectualize skills to guide the staff in the process of identifying and analyzing problems; and finally, the principal must have the political and managerial skills necessary to resolve conflict and make the planning process work.

Organizational Behavior Management (OBM)

Apparently, effective management skills are crucial for principals if they are to be successful in their role. The field of organizational behavior management (OBM) has evolved numerous methods for promoting managerial skills, and these should lend themselves nicely to the functioning of principals in their roles as instructional leaders. A substantial body of evidence has demonstrated the successful application of OBM in business and industry, and in recent years applied behavior analysis (ABA) principles have been increasingly utilized in business and industry settings (Andrasik, 1979). Riley and Frederiksen (1984) assert that OBM can serve a significant role in improving the effectiveness of human service agencies too. In their opinion, it is a tool that can improve the effectiveness of human services personnel. It is a systematic and well-documented approach that can reduce cost, improve productivity and help organizations achieve desired goals. As an integral part of the human services in education, behavior modification has been effectively implemented to improve student conduct, teacher performance, academic quality and productivity, and various adaptive social and emotional behaviors. Behavior modification has been contributing toward making educational systems more

effective and satisfying to students and school personnel (Sulzer-Azaroff, 1987).

Today, hundreds of behavioral studies of strategies for improving students' achievement and conduct, classroom management, teaching skills, social skills etc. have been published. In a new volume : "Applied Behavior Analysis in Education", the editors found that 451 articles on educational topics were published during the last 20 years in the Journal of Applied Behavior Analysis.

Surprising - and maybe disappointing - is the fact that few studies using the application of OBM or behavior modification have been conducted in educational administration. Only five studies, related to the school's principal as a behavior modifier, were found by this writer: Brown, Copeland, and Hall (1972); Copeland, Brown, Axelrod, and Hall (1972); Copeland, Brown, and Hall (1974); Nau, VanHouten, and O'Neil (1981); Souweine, Sulzer-Azaroff, and Frederickson (1977). Komaki (1982) supports this view about the scarcity of studies related to administration by stating that very few published studies exist in which managers' behaviors have been directly specified, measured and reinforced. Discussing the achievements of behavior analysis (BA) and the needs of education, Sulzer-Azaroff (1986) emphasized that there are numbers of factors that may

be preventing acceptance of behavioral methods - among them:

1) many educators are unaware of, or misinformed about, the advantages of behavioral strategies;

2) even when they are aware of the benefits of the strategies, they may lack sufficient skills to implement them successfully, and

3) current contingencies may impede or fail to support implementation of the methods. There is little doubt that principals need to be informed about the advantages of behavior modification and that OBM has the tools for analyzing complex behaviors in a principals' struggle for effectiveness.

Considering that OBM approaches such as performance feedback and goal-setting, are being used in a wide variety of organizations, it appears that OBM is moving toward increased acceptance and more widespread application. Applying those OBM principles in the process of improving the effectiveness of the school principal as an instructional leadership - seems to be essential. Therefore, the purpose of this section of the literature review is to describe and discuss the characteristics of OBM. Surveying the literature, the writer will present findings and potential uses of OBM approaches in education.

Specifically, this section will focus on the following sub-sections:

1. Definitions, characteristics and contributions of OBM
2. OBM roots: behavior analysis and applied behavior analysis
3. Performance-based feedback and goal setting
4. Illustrative applications of OBM
5. Summary

Definitions, Characteristics and Contributions of OBM

Attempts to formally define the field of OBM are few. Perhaps one of the best working definitions was proposed by Hall (1980) and was mentioned above in the introduction. Kreitner (1982) has provided us with another: Organizational Behavior Management (OBM) involves the process of making specific job-related behaviors occur more or less often, depending on whether they enhance or hinder organizational goal attainment, through the systematic manipulation of (1) antecedent conditions that serve as cues, and (2) immediate pleasing or displeasing consequences.

At the heart of this process is the assumption that the environment, interacts with the person's response repertoire to dictate how we behave. This orientation represents a marked departure from the conventional wisdom of managing job performance. The usual practice has been to

focus either on the person (e.g., needs, attitudes, motives, traits or drives) or the situation (e.g., task, goals, rules, supervision, or rewards) but not on the systematic interaction between the person and the situation.

B.F. Skinner, who pioneered the operant conditioning field, had outlined a three-stage model to explain how the environment comes to influence and ultimately control our behavior. In his words: " An adequate formulation of the interaction between an organism and its environment must always specify three things: (1) the occasion upon which a response occurs, (2) the response itself, and (3) the reinforcing consequences." More recently, this model of person-environment interaction has been translated to an Antecedent-Behavior-Consequence (or A-B-C) model. Both A's and C's are part of the environment situation while the B's are the person's specific behaviors. Simply stated, OBM involves the modification of behavior via environmental adjustments. The three elements that collectively form a behavioral contingency and lead to its behavioral outcome are illustrated on the next page.

Kreitner (1982) has introduced the principles of OBM as a technology based on the natural science approach to the study of behavior. He emphasizes three basic principles:

A -----> B -----> C Functional Analysis

Antecedent--->	Behavior--->	Consequence	Behavioral Outcome
A	B	C	
The previous occasion upon which a particular emitted behavior led to a specific type of consequence.	Specific and observable, quantifiable in terms of frequency of occurrence.	Reinforcing, punishing, or nonexistent.	An increase or decrease in the frequency of behavior or its extinction.

(Luthans & Kreitner, 1974)

Figure 1: Behavioral contingency

Isolate key job behaviors

Attention in this first step needs to be directed at what the individual actually does or does not do. This is not the same as the traditional practice of questioning the person's character ("Pete is lazy."), psychoanalyzing the individual ("Lisa resents authority; her parents must have mistreated her as a child."), conducting an amateur psychological assessment ("Andre seems to have a strong need for achievement combined with a low need for affiliation."), or prejudicially stereotyping the person ("Grace won't make it as a middle manager because women are too emotional."). Granted, it is not easy to suddenly throw away these comforting old crutches, but the fact is they all practically assure managerial ineffectiveness when dealing with people. Specific behavior is the essential.

When attempting to isolate key job behaviors, the managers need to ask themselves the following question: "What behavior(s) does the individual need to engage in more often to make a greater contribution to collective objectives?" This deceptively simple question influences the managers' thinking in three important ways. First, attention is focused on behavior rather than on implied motives, needs, or drives or on the subjective character appraisals. Second, attention is focused on important behavior(s) that are critical to organizational or united success. Third, attention is focused on what is right rather than what is wrong with present performance. Regarding this point, it is more desirable from the standpoint of creating and maintaining a positive organizational climate to build up rather than tear down behavior.

Rearrange antecedents to provide opportunities and remove barriers

Recognizing the antecedent conditions are little more than cues that subtly, yet powerfully, tell us to behave in a certain manner, many opportunities exist to pave the way for improved performance. To the extent that opportunities outweight barriers, the likelihood of more frequent engagement in desired behaviors is increased.

Reinforce performance improvement with conditionally-granted desired behavioral consequences

Behaviors with favorable consequences will tend to be repeated while those with negative or no responses will disappear Managers need to provide a supportive climate for good performance. In addition to managing antecedents, managers can do much to improve performance by making sure that those who give, also get. In other words, by positively reinforcing those who work well, we can expect the hard workers to continue their efforts and good work.

Riley and Frederiksen (1984) have described four major contributions of OBM, which form the basis for using OBM to improve staff effectiveness.

The first of these contributions is the theoretical perspective. As introduced above, OBM is based primarily on behavioral or operant psychology. As the field has evolved over recent years, it has broadened somewhat to include the influences of social learning theory, as well as behavioral systems of analysis. The adoption of these related theoretical perspectives has been important for two important reasons: First, adopting a behavioral perspective allowed access to a large body of already available research. The data from operant or social learning psychology allow one to make predictions and understand relationships that otherwise might go unnoticed. A second

and somewhat related benefit of this theoretical perspective is that it tells one on what to focus in the organizational setting. Organizations are complex places. Those who wish to make changes in an organization must begin by focusing their attention on some aspect of this complexity. The theoretical perspective associated with OBM tells us that we must first look at the employees' behavior. What is it that they are are actually doing? This is not a focus on what they think about what they are doing as much as it is a focus on what their actual behavior is. We must also focus on the context in which that behavior occurs. What events or situations immediately precede the behavior and what consequences follow it? Here again the emphasis is on the immediately preceding and following events, not the historical context or long term consequences of a behavior. This elegantly simple tool provided by the behavioral perspective has proven to be immensely practical in simplifying inherently complex situations. In other words, it tells observers where to focus their attention within that complexity we call an organization.

The second important contribution is the methodology of applied behavior analysis. In many ways this may be the single most important contribution that OBM has to offer. Applied behavior analysis methodology is unique in several respects (Baer, Wolf and Risley, 1968; Hersen and Barlow, 1976; Luthans and Davis, 1982). First is its insistence on

ongoing measures of actual behavior rather than on single assessments of how people respond to a test. OBM insists that the actual behavior of importance be assessed in the natural environment as it actually occurs rather than in an artificial testing situation. Further, OBM requires that these measures be taken continuously rather than at one or two points. The importance of this requirement can not be overestimated. It forces one to look at what is actually happening, on an ongoing basis, in the situation of relevance. Inferences relating our measurements to the actual behavior are thus eliminated. Further, any trends in performance are immediately obvious, as are delayed effects of our interventions. A related methodological requirement is the use of single-case rather than between group research methodology. The important point that single-case methodology relies on a demonstration of functional control over behavior rather than statistical control should be emphasized. In other words, researchers must demonstrate that that the intervention they are evaluating has a practical impact on behavior, rather than simply demonstrating statistical significance. Further, this methodology eliminates a need for control groups, a feature that is immensely practical in actual organizational settings.

A third major contribution of OBM is a body of hard data. A number of extensive literature reviews (Andrasik,

1979; Babb and Kopp, 1978; Frederiksen and Johnson, 1981) have shown that OBM has accumulated a large volume of well-controlled experimental studies. These studies are almost exclusively conducted in organizational settings, using employees as subjects. They are generally well-controlled and have demonstrated positive outcomes. Of importance to our current topic, about half of these studies have been conducted in human service settings. Thus OBM has already accumulated an important data base that can be drawn upon for managing human service settings. Individuals wishing to improve staff effectiveness in human service settings do not have to start from scratch. A number of approaches such as time-management, feedback, goal setting have already been well-documented in the literature and give one a head start.

A fourth and final major contribution of OBM is techniques for behavior change. The field has developed, tested, and documented the effectiveness of several techniques that have been consistently shown to change important staff behavior in organizational settings. The importance of this is that OBM not only helps us understand behavior, it also gives us effective tools for managing it. Among the key methods include the use of goal setting and performance feedback, positive reinforcement, behavior based training strategies.

OBM Roots: Behavior Analysis and Applied Behavior Analysis

Organizational Behavior Management (OBM)is an extension of Behavior Analysis (BA) and Applied Behavior Analysis (ABA) into the world of work organizations. Behavior analysis is a basic science concerned with learning the determinants of behavior via highly controlled laboratory experiments. Applied Behavior Analysis is an outgrowth of the experimental analysis of behavior Originally it was to employ rigorous methods for establishing the applicability of BA findings to the solution of important social problems in field settings, hence the term "applied".

Behavior analysis Behavior analysis (BA) and applied behavior analysis (ABA) are the disciplines most closely related to Organizational Behavior Management (OBM) BA is a recent term. What is now BA was once called the experimental analysis of behavior. Skinner (1966) described the distinguishing features of the field in terms of the following: (a) dependent variables, (b) independent variables, (c) treatment of relations among variables and (d) attitudes toward research. The dependent variable was rate of operant response from which its probability was inferred. Independent variables were stimuli described in the language of physics. The relationships among independent and dependent variables were behavior processes upon which the analyses were focused. The behavior

analyst's attitude toward research was to avoid theories requiring data averaging, hypothesizing and statistical analyses of data required by theory testing methods. Behavior analysis has moved beyond the strict data based approach outlined by Skinner above and now deals with averaged data and data based theories.

Applied behavior analysis As the historical review indicates, applied behavior analysis has grown out of an operant perspective on human behavior. The operant approach has, of course, been characterized by the demonstration of experimental control over the primary variable of interest: behavior. As this research strategy has evolved, it has increasingly been applied to behaviors of social significance. The application of the principles of experimental analysis to socially important behavior has been termed applied behavior analysis (ABA). Luthans and Martinko (1979) recently characterized ABA as it relates to organizational management. Their characterization identified behavior as the primary analytical unit, emphasized principles of sound experimental research, and stressed a concern with behaviors of practical significance to the organization.

A more detailed specification of the characteristics of applied behavior analysis is to be found in the now classic article by Baer, Wolf and Risley (1968). In this article,

seven characteristics of the ABA approach were identified:

First, it is applied. The behavior chosen for study is one that is relevant to important concerns of the society or, in this case, the organization.

Second, it is behavioral. It focuses on what individuals actually do and not simply on what they say or how they feel unless these are also of importance to the problem under study. This is a decidedly pragmatic approach. In the words of the authors, "Behaviorism and pragmatism seem often to go hand-in-hand".

Third, it is analytic. A believable demonstration that the behavior of interest was in fact under the control of the independent variable is necessary. This is often translated into the requirement of documenting the reliability of the dependent measures and providing demonstrations of experimental control. These demonstrations have been made possible through the evolution of individual-subject designs such as reversal or multiple-baseline designs.

Fourth, applied behavior analysis is technological. This means that the techniques which make up a particular intervention are identified and described in such a manner as to permit replication. The simple identification of vague techniques (e.g., sensitivity groups, team building) is not sufficient to meet this requirement.

Fifth, applied behavior analysis employs a consistent system Although it may be possible to identify the techniques on a strictly operational basis, it is also necessary to put them within a conceptual framework. This framework has often involved concepts taken directly from operant psychology.

Sixth, interventions must be demonstrably effective. The demonstrated behavior change must be important and of practical significance. In short, ABA must, by definition, be effective.

Finally, the behavior change must have some generality. It is not sufficient to demonstrate significant change in an extremely limited or artificial environment such as a laboratory. The effects must be durable and broadly enough based to effect change in naturally occurring environments.

In practice, the applied behavior analysis approach has often been translated into procedural steps for managing problem behavior. While these steps have been articulated by a number of authors (e.g., Miller, 1978) one of the clearest presentations was by Luthans and Kreitner (1975). These authors presented a systematic five-step model they called behavioral contingency management:

1. Identify the performance-related behavioral event;
2. obtain baseline measurements of the frequency of the response;

3. identify the existing contingencies of reinforcement through a functional analysis;
4. develop and implement an intervention strategy, and
5. evaluate the effectiveness of the intervention.

To summarize, applied behavioral analysis has grown out of operant psychology and the associated scientific approach labeled the experimental analysis of behavior. In some ways it may be more appropriate to think of applied behavior analysis as a process for analyzing and modifying behavior rather than as a theory of behavior. Because of its emphasis on observable events, careful methodology, and modification of behavior of applied significance, ABA is an excellent foundation for OBM. Often, this application has taken the form of a series of systematic steps designed to modify targeted behaviors. While helpful, this fixed series of steps can also be limiting. However, ABA has evolved into a more comprehensive approach to organizational behavior.

Performance Based Feedback and Goal Setting

An investigation of the application of behavioral principles to organizational problems and processes suggests that feedback is one of the most widely used intervention procedures within the field of OBM (Andrasik, 1979; Prue, frederiksen and Bacon, 1978). Alone or in combination with other procedures, it has been succesful in the modification

of behaviors as diverse as safe performance of job tasks (Sulzer-Azaroff, 1978), delivery of training sessions (Panyan, Boozer and Morris, 1970), staff suggestions and the completion of production tasks (Quilitch, 1978).

On the simplest level, feedback is the provision of information regarding past performance. As such, it is related to the use of instructions. However, feedback differs from instructions in two primary respects. Operationally, instructions are typically provided only prior to the occurrence of behavior. Feedback follows performance and is typically provided in a way that allows for comparison between the observed performance and some standard (Frederiksen and Johnson, 1981). Feedback and instructions also seem to have differential effects on behavior. As noted above, feedback has frequently been shown to have significant effects on a variety of behaviors. There are at least two possibilities regarding the operation of feedback: either the effects are general or they are specific.

The possibility that the effects of feedback are general suggests that the effects of feedback on a single variable generalize to other variables that are related in some way. The provisions of the feedback and associated management attention to a single behavior could tend to increase overall performance of other related behaviors.

There are data which show the generality of feedback effects. Chandler (1977) found that providing individualized, daily feedback and social praise to a shift supervisor on production not only increased productivity on the supervisor's shift, but also decreased the number of negative comments (complaints) made to the department manager, a non-targeted behavior.

Similarly, Miller (1978) has described two case studies in which generalized feedback effects were observed. In the first case study, feedback on attendance, via public posting of individual employee data, was combined with social reinforcement for increased attendance. In addition to increasing attendance, the feedback intervention produced an increase in plant operating efficiency and a decrease in employee turnover.

In a second case study, daily individualized feedback and social reinforcement was provided to weavers on production efficiency measures. The intervention was shown to be effective in increasing production efficiency. Further, the intervention was associated with increases in job attendance, decreases in labor turnover and a decrease in the number of defects per yard of yarn. Supervisors also noted an increase in the quantity and quality of interactions among employees.

If the effects are specific, than feedback has an impact only on those specific variables to which it is applied. Other associated variables will not be impacted by that feedback. Some evidence concerning the specificity of feedback effects also exists. Komaki, Waddell and Pearce (1977) monitored three different behaviors of grocery store clerks (physical presence in store, customer assistance, and shelf stocking) and provided them with feedback and contingent rewards for the attainment of specific goals in a multiple baseline design across the behaviors. Each behavior improved as a function of the reward/feedback intervention. However, improvement was observed only as the intervention was introduced for a specific behavior.

Similarly, Kreitner, Reif and Morris (1977) demonstrated the effects of feedback on the performance of daily routine duties on individual or group therapy sessions in a psychiatric hospital. Again, each behavior improved markedly, but only as the feedback was introduced for that specific behavior.

Another important manipulation used in the OBM process is goal setting, a highly promising strategy for improving performance in the organizational setting. Locke's (1968) theory of goal setting deals with the relationship between conscious goals or intentions and task performance. The basic premise of the theory is that an individual's

conscious intentions regulate his actions. A goal is defined simply as what the individual is consciously trying to do. According to the theory, difficult goals result in a higher level of performance than do easy goals, and specific difficult goals result in a higher level of performance than do no goals or a generalized goal of "do your best." In addition, the theory states that a person's goals mediate how performance is affected by monetary incentives, time limits, , knowledge of results (i.e., performance feedback), participation in decision making, and competition. Goals that are assigned to a person (e.g., by a supervisor) have an effect on behavior only to the degree that they are consciously accepted by the person. Thus, Locke states, "It is not enough to know that an order or request was made; one has to know whether or not the individual heard it and understood it, how he appraised it, and what he decided to do about it before its effects on behavior can be predicted and explained".

In their comprehensive review, Fellner and Sulzer-Azaroff (1984) describe goal setting behaviorially : " A goal is a stimulus that precedes behavior. When the antecedent goal reliably accompanies a reinforced response it acquires "discriminative control," increasing the probability that it will cue the individual to repeat the behavior. Also, attainment of a goal can function as a reinforcing stimulus. For example, if meeting the goal is

paired frequently with a positive consequence or removal of a negative consequence, the goal can function as a conditioned reinforcing stimulus."

The following example illustrates the relation between goals and behavior: In the rewinding department of a paper mill, the number of rolls produced by each employee is posted daily on a large graph. The supervisor assigns a goal to each employee. After discussing the goal selected, she places a heavy dark line next to the employee's name on the graph, indicating the goal for the next day. (So far, an antecedent stimulus has been presented.) When the individual employees' performance meet or exceed the goal, the supervisor praises them for the accomplishment. (Now, the consequence of behavior, meeting the goal, is paired with praise.) After several days of assigning the goal, meeting the goal and receiving praise for such performance, the goal has become both a discriminative stimulus, and a conditioned reinforcer.

In order to produce the best results, Luthans and Locke (1979) have suggested steps to goal setting. The goal set should have two main characteristics. First, it should be specific rather than vague: "Increase sales by 10 percent" rather than "Try to improve sales." Whenever possible, there should be a time limit for goal

accomplishment: "Cut costs by 3 percent in the next six months."

Second, the goal should be challenging yet reachable. If accepted, difficult goals lead to better performance than do easy goals. In contrast, if the goals are perceived as unreachable, employees will not accept them.

A third step to take when introducing goal setting is to ensure the availability of necessary support elements. That is, the employee must be given adequate resources - money, equipment, time, help - as well as the freedom to utilize them in attaining goals, and company policies must not work to block goal attainment.

If goal setting is to work, then the manager must ensure that subordinates will accept and remain committed to the goals. Simple instruction backed by positive support and the absence of threats or intimidation were enough to ensure goal acceptance in most of the studies. Subordinates must perceive the goals as fair and reasonable and they must trust management, for if they perceive the goals as no more than a means of exploitation, they will be likely to reject the goals. To summarize, goal setting is a simple, straightforward, and highly effective technique for motivating employee performance. It is a basic technique, a method on which most other methods depend for their motivational effectiveness. Used incorrectly, goal setting

may cause problems rather than solve them. If, for example, the goals set are unfair, arbitrary, or unreachable, dissatisfaction and poor performance may result. If difficult goals are set without proper quality controls, quantity may be achieved at the expense of quality. If pressure for immediate results is exerted without regard to how they are attained, short-term improvement may occur at the expense of long-term gains. Like any other management tool, goal setting works only when combined with good managerial judgment.

Another promising approach for changing managerial behavior and performance is the use of feedback in combination with goal setting. Several studies reported that goal setting plus feedback has been found more effective together than either one separately For example, in four telephone companies, Kim and Hamner (1976) compared goal setting and feedback to goal setting alone for improvement of the following five variables:

1. cost performance-the ratio of the forecasted cost divided by the actual cost;
2. absenteeism-the number of eight hour shifts from which that workers were absent;
3. the number of lost-time injuries;
4. service-foreman's rating on the quality of service, and
5. worker satisfaction with work, pay, job, fellow employees and supervisors.

Each telephone company received one of the following:

1. weekly goal setting, praise and feedback from the supervisor (external feedback) on goal attainment;
2. weekly goal setting and the worker rating himself on attaining the goal (internal feedback);
3. goal setting, praise, internal feedback and external feedback;
4. goal setting only, which may have received some internal feedback. The results showed that goal setting, feedback and praise was superior to goal setting alone.

A few studies have evaluated the effects of feedback and goal setting interventions on both staff process behaviors and intended outcomes but the target of the intervention has generally been limited to the process behavior. Illustrative of this approach was an investigation reported by Ivancic, Reid, Iwata, Faw and Page (1981). The focus of the intervention was language training for profoundly retarded institutionalized children.

During and following language training sessions, staff were provided with feedback by their supervisors for the rate of appropriate staff antecedent vocalizations, descriptive praise and sound imitations and prompts. Feedback related to patient vocalizations was also provided. The intervention package resulted in increases in both appropriate staff behavior and patient vocalizations.

The results of these and other studies seem to make it clear that feedback and goal setting interventions can result in increases in desired process behaviors and organizationally relevant outcomes. Taken as a whole, these results show remarkable consistency in terms of being the best approach for changing behavior and performance. This package has been effective in managing a range of organizationally relevant behaviors including safety, task completion, absenteeism, waste reduction and many others. The results have been replicated in both industry/business and human services. This is important especially because of the applicability issue.

Illustrative Application of OBM

The growing body of research demonstrating the usefulness of behavioral techniques in controlling many problems found in organizational settings has been instrumental in developing an applied behavior analysis. Ford (1970), gives examples of succesful treatment of OBM in business as well as in human services organization. Faced with problem of absenteeism and tardiness, two organizations: a hardware operation with six outlets and a large metropolitan school system, applied behavior modification principles to solve their common problems. These organizations used the principle of positively

rewarding certain behaviors. The hardware store used a plan whereby monthly drawings for prizes were held for those who had perfect attendance and punctuality. There was approximately one prize for every twenty-five employees, and every six months a drawing was held for a major prize, a color television. Behavior modification principles used were positive reinforcement for desired behavior, with reinforcement being on a variable ratio schedule. As a result of this program, sick leave payments decreased 62 percent and absenteeism and tardiness were down 75 percent during the first 16 months.

A metropolitan school system, which was experiencing high teacher absenteeism and thus high substitution costs, used a fixed interval plan in which all teachers who had not been absent for a whole semester were rewarded with 50 dollars. This plan effectively decreased teacher absenteeism and substitution expense.

The example from the school emphasizes that OBM can serve a significant role in improving the effectiveness of the human services. As Riley and Frederiksen (1984) stated earlier, OBM offers one overriding promise to human service organizations - an effective and reliable approach to changing specific staff behaviors. A variety of OBM techniques, including goal setting and feedback, contingent reinforcement, training, and time management have been shown

to effect improvement in important staff behaviors (Frederiksen & Johnson, 1981). These have been replicated across a wide variety of settings by a large number of investigators.

One of the first studies to investigate the effects of feedback in a human service setting was conducted in a state institution for retarded children. (Panyan, Boozer, & Morris, 1970). Staff on all living units were given formal training on how to conduct behaviorally oriented training sessions with the residents. Baseline data showed that shortly following the completion of training, the staff conducted a gradually declining percent of the required training sessions. The authors then introduced publicly posted feedback on the percentage of training sessions conducted, using a multiple-baseline design across three of the institution's living units. The results indicated a clear and consistent increase in the number of sessions conducted following the introduction of feedback.

Quilitch (1975) compared the effects of feedback and administrative memos on the activity level of patients in a residential institution for the retarded. First, an official memo was sent from the administrator of the agency to all involved staff. The memo stressed the importance of activities for the residents and recommended specific procedures for enhancing activity levels. Finally, staff

were specifically assigned the responsibility for being activity leaders; the number of residents involved in activities was prominently posted inside the nursing station. Results indicated an increase in resident involvement in activities from the baseline level of 7 to an average of 32 after implementation of feedback and staff activity assignments. In other words, by using the OBM approach of specifying the staff and residents' assignments and giving feedback for their activities, the performance increased.

In education, Behavior Analysis has been applied to improve many problems. During the last twenty years, many hundreds of behavioral studies have been reported, dealing with a wide variety of subjects. To mention only a few: elimination of disruptive, out-of-seat or other behaviors that interfere with classroom routines, improving academic skills in terms of reading, writing, mathematics, science, acquiring social skills, teaching skills and classroom management, and so on.

Summarizing those behavioral studies, the conclusion drawn is that behavior analysis has contributed toward a significant improvement in some educational setting. A key to this success is the positive approach of this stategy. One of Skinner's (1965) points was that schools often are excessively punitive and punishment results in various

undesirable side effects. Behavior modifiers working in educational settings tend to concentrate on positive rather than negative contingencies. In other words, desirable school or classroom related behaviors are positively reinforced rather than undesirable behaviors punished. Many maladaptive behaviors are ignored and seriously disruptive behaviors are treated with respond cost, time-out, overcorrection and even punishment while desirable alternative behaviors are targeted too for positive reinforcement. Specifically, positive contingencies tend to be emphasized in educational applications of behavior modification.

Although numerous studies have been conducted to improve teaching skills and classroom management, only a few have involved principals. The principal is responsible for much that occurs within the school and is continually behaving in ways that affect students, teachers, and parents, yet relatively few studies have been done to demonstrate how the principal can use ABA or OBM approaches. In one study, Brown and his colleagues (1972) reported that by using behavioral modification techniques, the principal reduced students' absenteeism, tardiness and disruptions. In another study, by Nau et al. (1981), the principal helped to mediate a time-out procedure among disruptive junior high school students. Souweine, Sulzer-Azaroff, and Frederickson (1977) studied how a principal's positive comments might influence

teachers' rates of praising students. The teachers first were trained in a workshop to apply specific praise in their classrooms. Initially their rates of praise were high following training, but they began to drop off gradually during a phase in which the principal visited regularly to comment on other matters. When the principal began to comment positively on the teacher's use of praise, the rates increased to the high posttraining level.

Very few studies have been published in which OBM has been applied in educational organizations as a whole, particularly in educational administration. Maher (1982) describes one in which teachers in two elementary schools were responsible for generating the daily instructional program of one handicapped pupil and for planning and evaluating that pupil's mainstreaming instructional program each week. They did this sporadically until a performance feedback sheet was introduced by the principal and checked each week if the duties had been performed. The feedback from the principal markedly increased the percentage -- to nearly 100% -- of instructional programs and evaluation recordings.

Maher (1981) also found that active participation and feedback were especially effective in a study with educational personnel. Several public school principals were trained in a program that included discussion, behavioral

rehearsal, social reinforcement, and feedback. The program involved participants, with a trainer, in didactic presentations and discussion activities, simulation and role playing exercises, and receipt of performance feedback and reinforcement. The participants were instructed in pinpointing and recording organizational behavior and performance problems, designing and implementing organizational intervention programs, evaluating intervention effectiveness, and involving staff in the change process. The results suggest that participants were able to apply OBM techniques to facilitate improved organizational behavior and performance in their schools.

Summary

In view of the substantial body of evidence that has suggested the successful application of OBM in business, industry, human services and in the classrooms, it is hoped that this trend will move toward increased acceptance in educational administration. As a recurring theme of this paper, it seems that behavior modification can be applied to a variety of areas, including human resources management, re-socialization of workers, personnel development, job design, compensation and alternative rewards, facilitating change by positively reinforcing behavior rather than

attitudes, organizational design, and in education - in the different aspects of classrooms and schools.

The OBM approach is efficient. Although it employs the same techniques as many other approaches, it does so in a different fashion. For example, consider the term "feedback": In many organizations - including schools - the term feedback means a meeting with the supervisor, on a quarterly or semiannual basis, in which the individual's performance is critiqued based on supervisor's impressions, survey results or average performance. In contrast, OBM based feedback techniques are different. Feedback occurs on a daily or weekly basis rather than quarterly. In addition, it is based on subjects' actual performance rather than on supervisor's impressions or survey results. Finally, it specifically addresses a single targeted behavior rather than a global evaluation that includes a wide variety of behaviors. In other words, it pinpoints the specifics of what is being done well and what improvements remain to be made, rather than providing a generalized impression.

The distinction between "regular" feedback techniques and OBM based feedback techniques can be compared with the two different types of program evaluation in schools: summative and formative evaluation. Summative evaluation is concerned with the overall program after it is in operation or after it has been completed. Formative evaluation is

concerned with helping the developer of programs or the teachers through the use of empirical research methodology in the process of the development and implementation of the program; this evaluation is usually designed to improve teaching performance on a daily/weekly basis (Barber, 1984). A similar set of distinctions holds when considering positive reinforcement. Reinforcement in OBM intervention is often of a small magnitude, keyed to specific performance, and is contingent upon the desired behavior. Similar to behavioral feedback, it tends to be given frequently and immediately. In contrast to the reward systems in most organizations (including schools) in which rewards are dispensed more on the basis of people simply showing up for work rather than their performance when they are there, the presentation of reinforcement depends on the behavior of the individual. Here again the significance of this contribution is that these are techniques that have demonstrable effectiveness in changing specific staff behaviors.

Because few attempts have been made to apply OBM in educational administration, analyzing "local" issues such as development and assessment of a new curriculum, a better supervision and evaluation system for teachers, achievement of students, and others are worth trying to encourage principals to use the successful OBM approaches. A major strength of this model is the pragmatic behavioral emphasis which would force principals to observe the effects of their

interventions and to relate them directly to their own performances. By involving jointly principals and staff and/or the students in identifying, measuring, analyzing, designing successful interventions, and evaluating, a new mutually rewarding relationship will occur. The primary benefit of this new kind of effectiveness will accrue to the students, teachers, parents, and with no doubt to the principals themselves.

CHAPTER III

METHOD

Setting

This study was conducted in an elementary school (experiment no. 1) and in a middle school (experiment no. 2), both in college towns in the northeastern United States.

Schools

School A (the elementary school), with a student population of 437 and school B (the middle school), with a student population of 513 were chosen from among seven other schools from a list given to the researcher by the closest Regional State Bureau of Education. The researcher approached the Bureau and met with its director to explain the research and to ask for a list of schools. Interviews were conducted with all the principals and, in terms of availability, these two schools were found most suitable. The schools' proximity to the university where the researcher and his research assistants were students and the principals' willingness to be part of the study, were primary factors in selecting these schools.

Classes

School A, contained 19 classes, grades 3 to 5. School B, contained 21 classes, grades 7 and 8. The academic levels in both schools, according to standard state tests, was above

the average. A variety of educational programs were available for different levels of students.

Class 1, in school A, was a third grade with a total enrollment of 21 students. Classes 2 and 3, in school B, were focused on remedial reading and were held in two different periods: period 5 and period 7. Each group contained 6 students.

Subjects

Two principals, two teachers and 19 students participated. After the general purpose of the research was explained to the principals, the researcher asked them to participate and to present names of tenured teachers who would like to take part in this research.

Principals

In school A, the principal, a Doctor of Education, was a 50 year old female with 24 years of experience as an educator, during 9 of which she has served as an elementary administrator. She had been the principal of this school for the last three years and previously had been a principal of another school in the system. Prior to that, she had been an elementary teacher in 4, 5, and 6 grade.

In school B, the principal was a 50 years old male with 25 years of experience as a science teacher. For two years

he served as transition task force leader (transforming the school from a junior high school to a middle school), and has been the principal of this school for the past two years. He held a M. Ed. degree and an extensive number of credits toward a doctoral degree.

Teachers

The researcher asked the principals for names of tenured teachers who would be likely to agree to participate. Selection was limited to tenured teachers in order to avoid the influence of tenure decisions as potential confounding variables. The subjects were told that the researcher was conducting a study in instructional leadership. Participation required: 1) the presence of two or three observers over a 5 - 8 weeks period; 2) in the second experiment, participation by the teacher in an OBM training session. The subjects were told that the observers would be recording information about the behavior of the principal, teacher and students but that the regular routine of the classrooms would be continued as usual. The exact nature of the data collection procedures was not revealed because their knowledge of all the details might have invalidated the study. They were informed, however, that all the details would be explained after the conclusion of the study.

In school A, teacher 1 was a 44 year old female with 16 years of experience. She had taught third and fourth grades

in the school for the last 14 years and held a M. Ed. degree. In school B, teacher 2 was a 51 year old female with 24 years of experience. She held an M. Ed. degree and taught reading and writing in this school for the last 18 years.

Students

In school A, class 1 had 21 students: 10 boys and 11 girls, ages 8 1/2 - 9 1/2 years old. Four girls and three boys served as subjects. They were selected because of their poor academic performance in learning multiplication tables. This skill had been formally taught in the beginning of the school year, over a period of three months but the student-subjects had failed to master the tables despite the teacher's best efforts. Classes 2 and 3, in school B, contained six students each: class 2 in the 5th period had one girl and five boys and, class 3, meeting in the 7th period included three girls and three boys. These students left their home-rooms for one hour of small group or one-to-one tutoring with the aim of elevating their reading levels to the average of other students.

Apparatus

Observers used mini tape recorders and a tape prerecorded to give instructions each 30 second interval. Ear phones prevented others from hearing the recording. Clip boards, pens and different observation forms (See

Appendix A.) were also used by the observers. In each experiment, a wall-chart was used to record the students' academic performance. The wall-charts were different in each classroom - according to the subject-matter learned.

Dependent Variables

Throughout the research, measures were taken of principal, teacher and student behavior and recorded on observation sheets. The definitions of each variable follows.

Principal variables

Principals were observed for the following behaviors:
1) Verbal praise: any positive feedback or praise to students indicating approval or admiration for the academic performance of math or reading. Examples: "Terrific job ___"; "Very good ___"; "You worked very hard, ___"; "Excellent ___, you did it!!".
2) Positive non-verbal feedback: facial or hand gestures indicating approval directed at the students. Examples: smiles, pats, makes eye contact, nods, shakes hands.
3) Goal setting: any statement which defines specific behavioral objectives for students. For example, the principal asks a student what s/he thinks s/he can do for next time.

Teacher variables

Teacher 2 was observed for the same variables as the two principals.

Student variables

Achievement of academic performance

Experiment 1. Completion of multiplication tables: number of correct answers to an oral or written quiz of 20 drills, based upon the multiplication tables yet unmastered were calculated.

Experiment 2. The number of pages read during daily period of silent reading was recorded. For the silent period, the behavioral dimension of being "on-task" was: student orienting head and eyes toward the book; "off-task": student orienting head or eyes toward something other than the book or toward someone in the class. Students who were out of his/her seat because of not having a book to read or needing to go to library to change the book, also were considered as "off-task".

Observational System

Observers

Seven undergraduate students served as observers three in the first experiment and four in the second experiment. Notices advertising the need for observers for an

educational research project were posted throughout the psychology building of the local university. After being interviewed by the researcher, they were selected from a pool of students who had been enrolled in an course in Organizational Behavior Management offered the previous semester and from an educational psychology class. The observers received 3 undergraduate credits in independent study for their participation.

Observer training

The observers were blind as to the nature of the treatment variables, nor were they aware of the introduction of experimental phases. The observers were trained by the researcher in six 1 1/2 hour training sessions. They practiced using data sheets, computing reliability on different behaviors and they learned to score several precise behavioral measurements by observing videotapes, some of which were developed especially for the training workshop; others were taped from a popular T.V. show. (See Appendix B.) The behavioral recording techniques in which they were trained: event recording, to record the number of times a behavior occured during a specific period of time; partial interval recording, to record the behavior when a single instance of the behavior occurred in the interval; and momentary time sampling, to record the behavior if emitted at the moment the interval terminated. During the training workshops, the observers communicated with one

another, from time to time, to clarify definitions and recording methods. The observers practiced until an 85% agreement score was achieved three successive times and then, they continued to practice measuring principal, teacher and student behaviors in one classroom for a period of several weeks. The reliability of their scoring was checked by calculating their coefficient of agreement according to the formula:

$$\frac{\text{number of agreements}}{\text{number of agreements plus disagreements}}$$

for each behavior observed.

Observational Procedures

Experiment I Data were recorded three times a week for a total of eight weeks.

Observation of principal.

After the principal A entered the class and went to the wall-chart (See Appendix C.) to observe and comment on the academic performance of the previous day, the principal was observed when she took the seven student-subjects aside to speak about their performance on the multiplication tables. Usually, her visits were 10-15 minutes long. During each 30 second interval, a frequency count was made by the observers, of the principal's use of verbal praise, non-verbal feedback and goal setting. The beginning and the

end of each interval was signaled by the tape. At the end of each interval, the observers tallied their marks for each category and at the conclusion of the daily observation, the tallies were summed. Rate was computed by calculating the number of verbal, non-verbal feedback and goal setting statements over the number of intervals.

Observation of students.

The students were observed three times a week, during the second recess of the day, for a period of 8 weeks. The observers or the researcher gave them quizzes based upon the multiplication tables: oral or written quizzes of 20 drills such as 7 x 2 = ? or 6 x 8 = ? (The drills were similar to those given in the class on regular basis, by the teacher). In order to change to a new multiplication table, the grade achieved was supposed to be 100%; if the grade were lower, a new quiz was administered - in conformity with the goal set between principal and students. The sessions in which they were together with the principal, when she commented on their academic performance, were observed, too.

Experiment II Data were recorded five times a week for a period of five weeks. The 5th period class was observed twice a week; the 7th period class - three times a week.

Observation of principal behavior.

Principal B was observed during his entrance into the

remedial reading classes during the 5th and 7th periods. His rates of praise, positive non-verbal feedback and goal setting were not recorded by the 30 second intervals but, with a descriptive observation of his statements. For the 5th period, the principal based his comments on the students' reading rates as displayed on a wall-chart designed by the researcher (See Appendix C.); for the 7th period, his comments were based on a daily report of the students' self-recorded reading rates. (See Appendix D.) The decision to use self-recording forms was based on several studies in which the effect of self-recording in classroom behavior and academic performance were measured. (Broden, Hall, and Mitts, 1971; Fixsen, Phillips, and Wolf, 1972; Glynn, Thomas, and Shee, 1973; Bullard, and Glynn, 1975) In these studies, it was suggested that self-recording procedures would be most effective if they were used in conjunction with established reinforcement techniques such as teacher praise.

Observation of teacher.

Similar to the first experiment (of the principal's behavior), teacher 2's use of verbal praise, non- verbal feedback and goal setting was recorded by a frequency count, during 30 second intervals, for a period of 25 minutes.

Observation of students.

The students were within the visual and auditory range of

the observers and were observed during a silent reading period of 15 minutes. Prior to the beginning of each daily observation, the students were counted and their names were on the observation sheet, from left to right. The observers used the PLA-Check recording system (Wilczensky, Sulzer-Azaroff, Feldman, and Fajardo, 1987). At the end of each 30 second interval, the observers looked at each student, starting from left of the classroom and proceeding to right and quickly assessed if the student was on or off-task. At the end of the daily silent reading period, the students self-recorded the number of pages read. (At the beginning of the research, the self-recording method was explained to teacher 2 by the researcher. She began to use this method immediately after explaining it to her students. Because of the form's simplicity, in terms of number of items asked, in a very short period of time the students performed the self-recording procedure as a routine part of their duties in the classroom.)

Almost daily, they were divided in pairs and for 30 seconds each student was supposed to describe briefly what he/she read. All 12 students' comprehension of the material, as well as the number of pages read during the silent period, was checked by the teacher, by asking them questions based upon this material. For example: The teacher would ask a student "What do you think happened to X on page Y ?" or "Give a brief summary of the last two pages you read".

Reliability

Inter-observer agreement of principal, teacher and student data was assessed during each experimental phase in both experiments by having two trained observers record data together during the observation session. The two observers used either the same tape recorder with two ear phones or two tape recorders pushed to play at the same time. The ear phone cords were 5-6 feet in length and the observers were thus able to sit apart, insuring greater independence of assessment.

Reliability coefficients were calculated using the formula:

$$\frac{\text{number of agreements}}{\text{number of agreements plus disagreements}}$$

Examples are given below.

Reliability of measurement of student behavior was calculated in this manner: The number of agreements was determined by comparing the number of students scored off-task between the two observers; the difference was subtracted from the total number of students to determine the agreements.

OBSERVATION SHEET

Observer 1

Student Interval		Student Interval
A		B
0	no. off-task	0
6	total number	6

OBSERVATION SHEET

Observer 2

Student Interval		Student Interval
A		B
0	no. off-task	1
6	total number	6

Interval A = 6 agreements and 0 disagreements (both observers agreed that 0 students were off-task and 6 students were on-task.

$$\text{Ratio: } \frac{\text{6 agreements}}{\text{6 agreements plus disagreements}}$$

Interval B = 5 agreements and 1 disagreement (there was agreement that 5 were on-task). This is added to the ratio and becomes:

$$\frac{\text{11 agreements}}{\text{12 agreements plus disagreements}}$$

This ratio is transformed to a coefficient of 91%.

Reliability of measurement of Principal A and Teacher 2's behaviors was calculated in this manner: The observers compared each category of each interval and determined the number of agreements. A cumulative tally of agreements and disagreements was made to determine a coefficient for the entire observation. F = feedback.

	Observer 1				Observer 2			
Interval:	1	2	3	...	1	2	3	...
F	2	3	2	...	2	2	2	...

Interval 1, F = 2 agreements and 2 agreements plus disagreements (there are no disagreements) so, according to the formula previously mentioned:

$$\frac{\text{2 agreements}}{\text{2 agreements plus disagreements}}$$

Interval 2, F = 2 agreements and 1 disagreement which is added to previous ratio and becomes:

$$\frac{\text{4 agreements}}{\text{5 agreements plus disagreements}}$$

Interval 3, F = 2 agreements and 2 agreements plus disagreements added to ratio becomes:

$$\frac{\text{6 agreements}}{\text{7 agreements plus disagreements}}$$

This ratio transforms into a reliability coefficient of 85.7% (6/7).

Experimental Design

Experiment I

The experimental design was a "single subject" reversal design. (ABAB) Borg and Gall (1983) defined this kind of design: "As its label implies, the distinguishing feature of a single-subject experiment is the fact that the sample of subjects is one. If two or more subjects are treated as one group, this also is considered a single-subject experiment". (p. 706) They continued to explain: "In using this design, the researcher needs to plan for four phases: initial period of baseline observation - (A); initial introduction of the treatment variable - (B); withdrawal or reversal of the treatment variable, second baseline (A) and, reintroduction of the treatment variable - (B). If the measurements of the target behavior vary as expected, the researcher has a convincing demonstration of the effects of the treatment variable." Sulzer-Azaroff and Mayer (1977) have emphasized the advantages of single-subject designs by stating that: " It minimizes the effects of one of the strongest confounding factors in behavioral research, individual client differences. The single-subject design allows comparisons between an individual's behavior under one condition and under other conditions." (p. 445)

Experiment II

The experimental design was a multiple baseline across two sets of individual/subjects (Baer, Wolf, and Risley,

1968). Basically, this design involves: 1) collecting baselines on the same behavior of several different individuals; 2) applying the intervention first with one individual while the the baseline conditions are continued with the other individuals; 3) applying the intervention to the second individual's behavior as in 2 above. This procedure is continued until it is determined whether or not each individual's behavior changes systematically with the intervention. As Sulzer-Azaroff and Mayer (1977) stated: "The object is to show that... the behavior of each individual changes substantially when - and only when - the intervention is introduced." (p. 454)

Procedure

To be more specific about the experimental designs used in this present research:

Experiment I

Baseline During the Baseline I phase (A), principal A was observed for her performance in terms of her engagement in goal setting and use of verbal praise and non-verbal feedback. The student-subjects were observed for their academic performance, in terms of their knowledge of the multiplication tables. Teacher A, passive in terms of the experiment and continuing her day-by-day activities, managed

a wall-chart for the whole class that was based upon the number of items accomplished from the multiplication tables.

Training of Principal Between the first baseline phase (A) and the first treatment phase (B), an Organizational Behavior Management training session was conducted for the principal by the researcher. The training session focused on the importance of verbal praise, positive non- verbal feedback and goal setting. Definitions of reinforcement and effective time management were stressed during the session.

Treatment Phase I During the first treatment phase (B), the research was divided in two different interventions:
1) the principal set goals, gave feedback and praised the students for their mastering the multiplication tables.
2) The researcher gave the principal feedback and praise on her performance of effective time management and OBM strategies (goal setting, praise and feedback).

Return to Baseline In the third phase, return to baseline (A), the treatment variables were withdrawn:
a) the principal continued her routine without any feedback from the researcher and if she entered the classroom, she was asked to refrain from giving any performance feedback, any praise or to set any goals for the students.
b) the students continued to take quizzes, in order to demonstrate mastery of the multiplication tables but, without any feedback or praise.

Treatment Phase II In the fourth phase, treatment II, (B) the same intervention variables as in treatment I were reintroduced. The principal followed the same procedure with the students while the researcher praised and provided feedback to the principal.

Following is a diagram of the experimental designs' sequence.

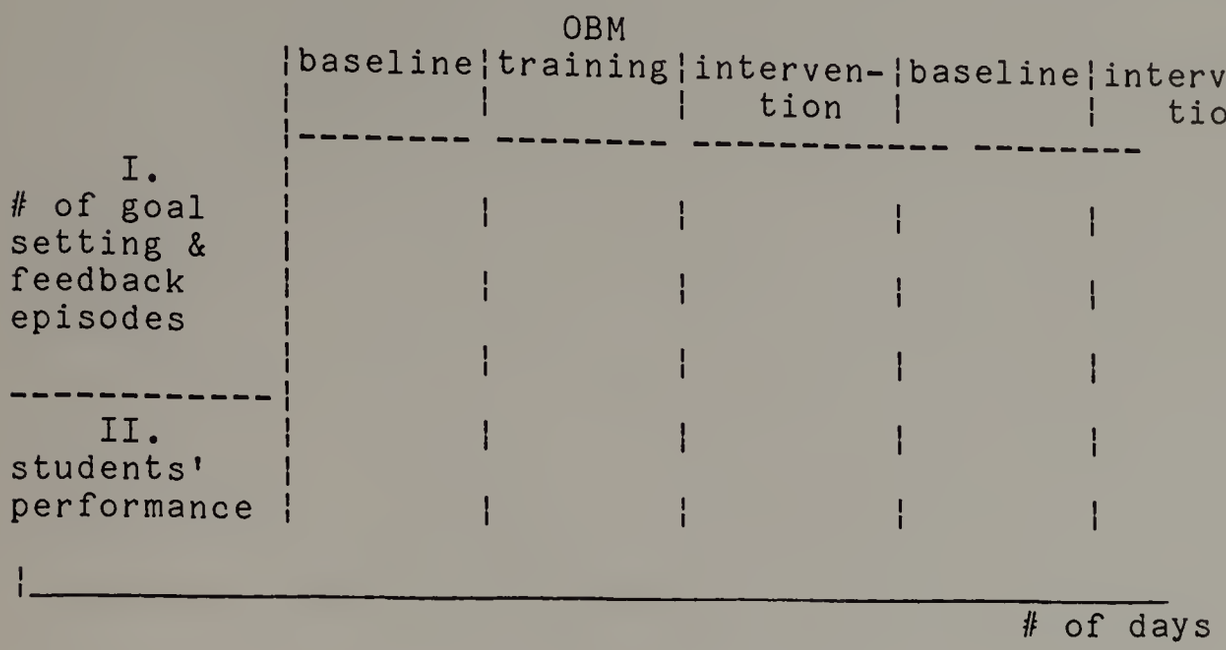

Figure 2. Diagram of treatment conditions for experiment I.

Experiment II

Baseline During the 5th and 7th periods, baselines were collected on the same behaviors (number of pages read in the classroom during a daily silent reading session of 15

minutes) for all the students-subjects - 6 in each class/period. Teacher B's rates of verbal praise, positive non-verbal feedback and goal setting were also recorded. The researcher conducted an OBM training session with principal B similar to that of principal A in the first experiment. In this experiment, the principal was supposed to model for and train the teacher, whose behavior, as mentioned before, was scrutinized also.

Treatment conditions While baseline conditions were continued with the 6 student-subjects from the 7th period, the 6 student-subjects from the 5th period were exposed to treatment conditions. The principal entered the classroom and, based upon the results from the wall-chart, praised the students, gave them feedback and set goals for their academic performance - in terms of numbers of pages read in class during the silent reading period. An illustration of his intervention follows: "I see ___ you read seven pages today. Excellent !! I think you did a very good job. You read two pages more than yesterday and this is really terrific !! How many pages do you think you can/will read tomorrow ?" A very important consideration in setting the goals was the degree to which the goals were attainable, yet challenging. The first one - attainability - was crucial because it created more frequent opportunities for students to receive positive reinforcement. Because of the remedial nature of these two classes, to set goals for even one or

two pages was challenging and if these goals were not met, every effort was made to achieve them the next day. The principal also spoke about the time spent on reading at home. (See further comments on this matter in the Discussion chapter.)

As part of his role in the experiment, the principal held an OBM training session at the end of one day with teacher B outside her classroom. By modeling the procedures of praising, goal setting, etc., for her, he emphasized the definitions mentioned above. The purpose of this session was to increase teacher B's rate of verbal praise, positive non-verbal feedback and goal setting in the 5th period.

After several days, the principal began to enter in the 7th period also, and the same treatment conditions were introduced, as in the 5th period. His intervention was based on the daily report from the students self-recording sheets, that he had received previously, The teacher's rates of verbal praise, non-verbal feedback and goal setting were observed in both periods and she received praise and feedback on her performance from the principal and from the researcher. The observers continued to record the students' academic performance in both periods and the days in which the principal was not in the classroom. On those days, the teacher was the only one to deliver the verbal praise, positive non-verbal feedback or set goals with the students.

Following is a diagram of the sequence of the experimental design:

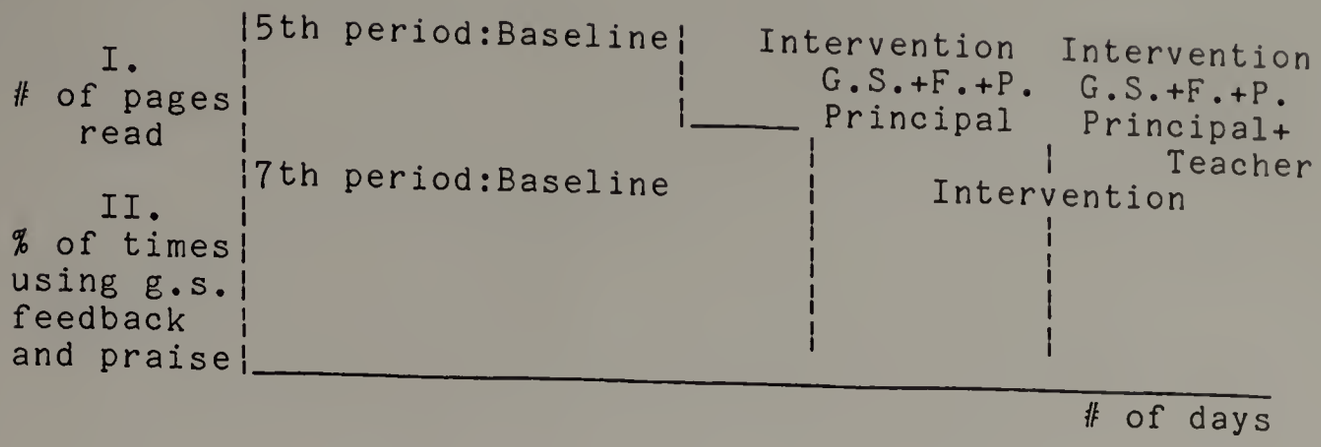

Figure 3. Diagram of treatment conditions for experiment II.

CHAPTER I V

RESULTS

This research attempted to measure:

1) the effect of OBM procedures, such as: feedback, praise and goal setting, performed by the principal, on the academic performance of students (Experiment I)

2) The effect of the principals' modeling and training of the teacher on the teachers' and the students, performance.

The data are presented graphically, according to the experimental designs: "single-subject" reversal design and multiple-baseline across individuals/subjects. A statistical procedure was also employed for further analysis.

In order to determine average changes in levels of the data, a mean was calculated for each phase to measure the central tendency. As Borg and Gall (1983) state: "The mean is generally considered the best measure of central tendency". (p. 364) The mean was calculated by dividing the sum of the scores by the number of scores. In order to determine whether there was a statistically significant change in behavior across phases, the statistical tool used was the ttest for differences between means (Bruning and Kintz, 1968; Hays, 1963; Borg and Gall, 1983). The initial step was to establish a null hypothesis: "There was no

change in performance between baseline and intervention phases". To determine whether the null hypothesis could be rejected, the test for statistical significance was carried out, at the significance level of .05. As stated by Borg and Gall (1983): "Generally, educational educators will reject the null hypothesis if ... is significant at the .05 level" (p. 373). The basic computational formula for the t-test of a difference between two means is

$$\frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\left[\frac{\Sigma X_1^2 - \frac{(\Sigma X_1)^2}{N_1} + \Sigma X_2^2 - \frac{(\Sigma X_2)^2}{N_2}}{(N_1 + N_2) - 2}\right] X \left[\frac{1}{N_1} + \frac{1}{N_2}\right]}}$$

where

$\bar{X}_1$ = the mean of the first group of scores

$\bar{X}_2$ = the mean of the second group of scores

ΣX_1^2 = the sum of the squared score values of the first group

ΣX_2^2 = the sum of the squared score values of the second group

$(\Sigma X_1)^2$ = the square of the sum of the scores in the first group

$(\Sigma X_2)^2$ = the square of the sum of the scores in the second group

N_1 = the number of scores in the first group

N_2 = the number of scores in the second group

The t values of the test were compared to the critical values of t statistic, and if found significant - the null hypothesis would be rejected. (In other words: the difference between baseline and intervention phases were found to be "significant".)

Reliability

Inter-observer reliability was calculated several times during the phases of the two experiments, at least once a week. The inter-observer agreements were as follow:

1. for principal A's behavior (Exp. I), it ranged from 84% to 100%, with a mean of 94.8.;

2. for students' performance in Exp. I - 100% and in Exp. II, it ranged from 92% to 100%, with a mean of 98.6, and

3. for teacher B's behavior, it ranged from 71% to 100%, with a mean of 91.4.

The inter-observer reliability for principal A (Exp. I), and Teacher 2 (Exp. II) follows on the next pages (See Tables 1 and 2.)

Table 1

Inter-observer Reliability for Principal's Behavior During Experiment I

Date	Variable	Phase	Obs.1	Obs.2	% Agr.
3/29	Non-verbal Feed.	Base. I	2	2	100
4/ 1	Goal Setting	Base. I	3	3	100
4/ 7	Praise	Inte. I	7	8	87.5
4/15	Non-verbal Feed.	Inte. I	16	15	93.75
4/20	Goal Setting	Base.II	9	9	100
4/26	Praise	Base.II	13	14	92.85
5/ 2	Goal Setting	Inte.II	15	15	100
5/10	Praise	Inte.II	21	24	84

Non-verbal Feed. = Non-verbal Feedback

Base. I/II = Baseline I - II;

Inte.I/II = Intervention I - II

Table 2

Inter-observer Reliability for Teacher's Behavior During Experiment II

Date	Variable	Phase	Period	Obs.1	Obs.2	% Agr.
10/31	Goal Setting	Base.	7	1	1	100
11/ 3	Non-verb.Feed.	Base.	5	5	5	100
11/ 4	Praise	Base.	7	3	3	100
11/10	Non-verb.Feed.	Base.	5	5	7	71
11/15	Goal Setting	Inte.	5	2	2	100
11/17	Praise	Inte.	5	7	6	85.7
11/18	Non-verb.Feed.	Inte.	5	9	10	90
11/18	Non-verb.Feed.	Inte.	7	11	10	90.9
11/21	Praise	Inte.	7	14	17	82.3
12/ 1	Praise	Inte.	7	8	9	88.9
12/ 5	Non-verb.Feed.	Inte.	5	11	10	90.9
12/ 7	Non-verb.Feed.	Inte	7	12	13	92.3
12/ 9	Goal Setting	Inte.	5	5	5	100
12/ 9	Non-verb.Feed.	Inte.	5	12	11	91.6
12/12	Non-verb.Feed.	Inte.	7	13	14	92.8
12/14	Praise	Inte.	7	21	18	85.7

Non-verb.Feed. = Non verbal Feedback

Base. = Baseline phase

Inte. = Intervention phase

Experiment I

Principal Behavior

The data on observation of the principal indicate that she made dramatic changes in her rate of praise, feedback and goal setting throughout the experiment. The number of positive comments (verbal praise and non-verbal feedback) delivered to the students as well as the rate of setting goals for them, increased across the interventions.

Goal setting (Fig. 4) During the baseline phase, the mean was 17. After the OBM training session and during the second phase of the experiment, when the principal received feedback and praise for her performance, the increase from baseline was substantial: 71.25. According to the *t* test, the change from baseline I to the first intervention phase was statistically significant at the $<.05$ level. (See Table 3.) During the intended return to baseline conditions, the average fell to 40 but still was higher than the first baseline phase. Finally, when the OBM procedures were reintroduced, again, the increase was apparent: 83.75, double the rate of the second baseline and five times higher than the first one. This increase also, was statistically significant, at the $<.05$ level.

Non-verbal feedback (Fig. 5) A similar trend as for the goal setting was found in this part of the experiment.

During the first baseline phase, the average rate of non-verbal feedback was 13.33, with an impressive increase during the intervention phase to 57, more than four times the baseline rates. A slight decrease occurred during the second baseline, 49.33. In spite of the fact that the treatment conditions were supposed to be withdrawn, the principal continued to deliver the non-verbal feedback increasingly - almost four times the rate of the first baseline. When she was asked to reintroduce the treatment conditions, her rate of change became even higher - 82. The results of the statistical test corroborate this change. (See Table 3.)

Verbal praise (Fig. 6) The results of this part of the experiment were the most substantial. The average rate of her use of verbal praise was the lowest among the three baselines: 5.33. Introduction of the treatment conditions, brought a dramatic change in the second phase - up to 53.5, ten times the baseline rate. Within that phase, the increase from the beginning up to the end of the phase was 46% - from 30% to 76%. Instructions to withdraw the intervention led to a decrease the very next day - to 50% but, as a whole, the mean of the second baseline remained high and almost similar to the previous phase - 52.66 (only .84 lower). In the last phase, the rate climbed to the highest point of the experiment (96%) and with the highest mean also, 88 - 17

times the first baseline mean. The t test's results show the statistical significance of this change. (See Table 3.)

Table 3

Statistical Significance of Principal A's Change of Behavior

Intervention	Phases	$\bar{X}$	t-Test Value	t-Statistic Value	Significance
Goal Setting	Base. I x Inter.I	17 x 71.25	7.14	2.015	<.05
	Base. II x Inter.II	40 x 83.75	9.87	2.015	<.05
Positive Non-verbal Feedback	Base. I x Inter.I	13.33 x 57	4.51	2.015	<.05
	Base. II x Inter.II	49.33 x 82	5.77	2.015	<.05
Verbal Praise	Base. I x Inter.I	5.33 x 53.5	4.18	2.015	<.05
	Base. II x Inter.II	52.66 x 88	8.54	2.015	<.05

Base. I = Baseline phase I

Inter. I = Intervention phase I

Base. II = Baseline phase II

Inter.II = Intervention phase II

Students' academic performance (Figures 7-13)

During baseline I phase, the results of the quizzes, based upon the tables previously not mastered showed that none of them achieved a grade higher than 85% (student 2); four of them received a mean less than 50%; student 1, 37%; student 3, 44%; student 5, 45% and student 6, 47.5%; the other three were approximately 67%: student 2, 73%; student 4, 69%; and student 7, 60%.

In phase two, when the principal set goals for the students' performance, gave them positive feedback and, praised their achievements - substantial increases occurred. The mean point for the group went from 53.5 in baseline I to 85.9 during this phase of intervention.

Individual achievements were interesting, as well. Student 1 mastered one table (7), and by the end of this phase, her grade was 100%. She was ready to begin a new multiplication table (8). Her mean score was 85%, compared to a 37% in the baseline. Student 2 finished one table (6), immediately in the early part of the first intervention phase. He then began a new table but, due to his absence on one of the intervention days - his average was not much higher than the baseline, 78 compared to 73. Student 3 did not master the multiplication table (7) but, her grades on the quizzes were higher than in the baseline (44) and her average was much more higher, almost double, 85. Student 4

finished the multiplication table (6) in the beginning of the phase after the first intervention, took another quiz on the same table and again, received 100%. He began a new table (7), and his quiz average was higher than in the baseline, 85 compared to 69. Student 5 mastered one table (7), and by the end of this phase, she received 100%, bringing her average to 88.3 - almost double than the baseline's average, 45. Student 6 finished one table (7) and was ready to begin a new one. Her grades were much higher in this phase, an average of 90. Impressive was the contrast between the first grade she received on the new table in this phase, 80% - with the grades she received during the baseline, which had averaged only 47.5. Student 7 mastered one table (7), achieved 100%, took another quiz on the same table - again receiving 100% - and was ready for the next table (8). The average on this phase, 90, was higher than in the baseline - 60. (See Table 4.)

In the third phase, the treatment conditions were reduced, the students continued to take quizzes on the multiplication tables. As a whole, grades were lower than during the previous phase of the experiment - only 68.9. Yet an increase can be observed over the first baseline mean of 53.5. On the individual level most performed better in this phase compared with the first baseline, especially student 1, 3, 5 and, 6. Student 6, with only minimal intervention of

the principal, accomplished another multiplication table (6), preparing her for tackling third table (8).

Table 4

Student/subjects' Mastery of Multiplication Tables

Multiplication Table	Stud. 1	Stud. 2	Stud. 3	Stud. 4	Stud. 5	Stud. 6	Stud. 7
2	A	A	A	A	A	A	A
3	A	A	A	A	A	A	A
4	A	A	A	A	A	A	A
5	A	A	A	A	A	A	A
6	A	L	A	L	A	L	A
7	L	P	L	L	L	L	L
8	L	L	P	L	L	L	L
9	A	A	A	A	A	A	A
10	A	A	A	A	A	A	A
11	A	A	A	A	A	A	A

A = Knew already; P = knew partially by the end of study; L = learned by the end of study.

During the fourth phase, when the principal increased the treatment conditions, the increase in the students' grades was apparent, again, yielding an average of 89.7%. All students performed better than during the previous phase and most of them improved their averages, in comparison with

the first intervention phase (student 1, 4, 5, 6, 7). Five of the seven accomplished all the multiplication tables, ultimately scoring 100% (student 1, 4, 5, 6, 7) and the sixth student (student 2) was close to mastering her third and last table. She received 90% on the last day of this phase and achieved 100% in the follow-up period.

In terms of the statistically significance, Table 5 shows that there was a change in the academic performance from baseline I phase and intervention I phase, as well as from baseline II phase to intervention II phase for students 1, 4, 5, and 7. For student 2, the change in performance between baseline II phase and intervention II phase was found statistically significant and for student 6, the first change in performance, between baseline I phase and intervention I phase, was found significant. Student 3 was the only one with no statistically significance in her rate of change. ($t<.05$)

Summary of Major Findings in Exp. I

1) There was an increase in the principal's rate of verbal praise, non-verbal feedback and goal setting, especially during the intervention phases, meaning - after the OBM training session and as a function of instructing her to deliver those antecedents and consequences, and of delivery of the feedback and positive reinforcement to her.

2. Contiguous with the intervention mentioned above, the student-subjects' academic performance was greatly increased and each learned almost all the multiplication tables. The trend of increase was statistically significant but, most important was the success of achieving the mastery of the multiplication, in a relatively short time.

Table 5

Statistical Significance of Students' Change in Their Academic Performance During Experiment I

Student	Phases	$\bar{X}_1$	$\bar{X}_2$	t-Test Value	t Stat. Value	Significance
1	Bas.1 x Int.1	37	85	3.41	1.895	<.05
	Bas.2 x Int.2	56.66	88.33	3.96	2.132	<.05
2	Bas.1 x Int.1	73	78.33	0.41	1.943	>.05
	Bas.2 x Int.2	72.50	87.50	2.24	2.132	<.05
3	Bas.1 x Int.1	44	85	1.69	1.943	>.05
	Bas.2 x Int.2	76.66	81.25	0.43	2.012	<.05
4	Bas.1 x Int.1	69	85	1.86	1.085	<.05
	Bas.2 x Int.2	70	93.30	4.17	2.353	<.05
5	Bas.1 x Int.1	45	88.33	4.64	1.943	<.05
	Bas.2 x Int.2	68.33	95	4.77	2.353	<.05
6	Bas.1 x Int.1	47.50	90	6.03	2.015	<.05
	Bas.2 x Int.2	75	86.25	0.77	2.015	>.05
7	Bas.1 x Int.1	60	90	2.72	1.943	<.05
	Bas.2 x Int.2	63.33	96.66	7.07	2.132	<.05

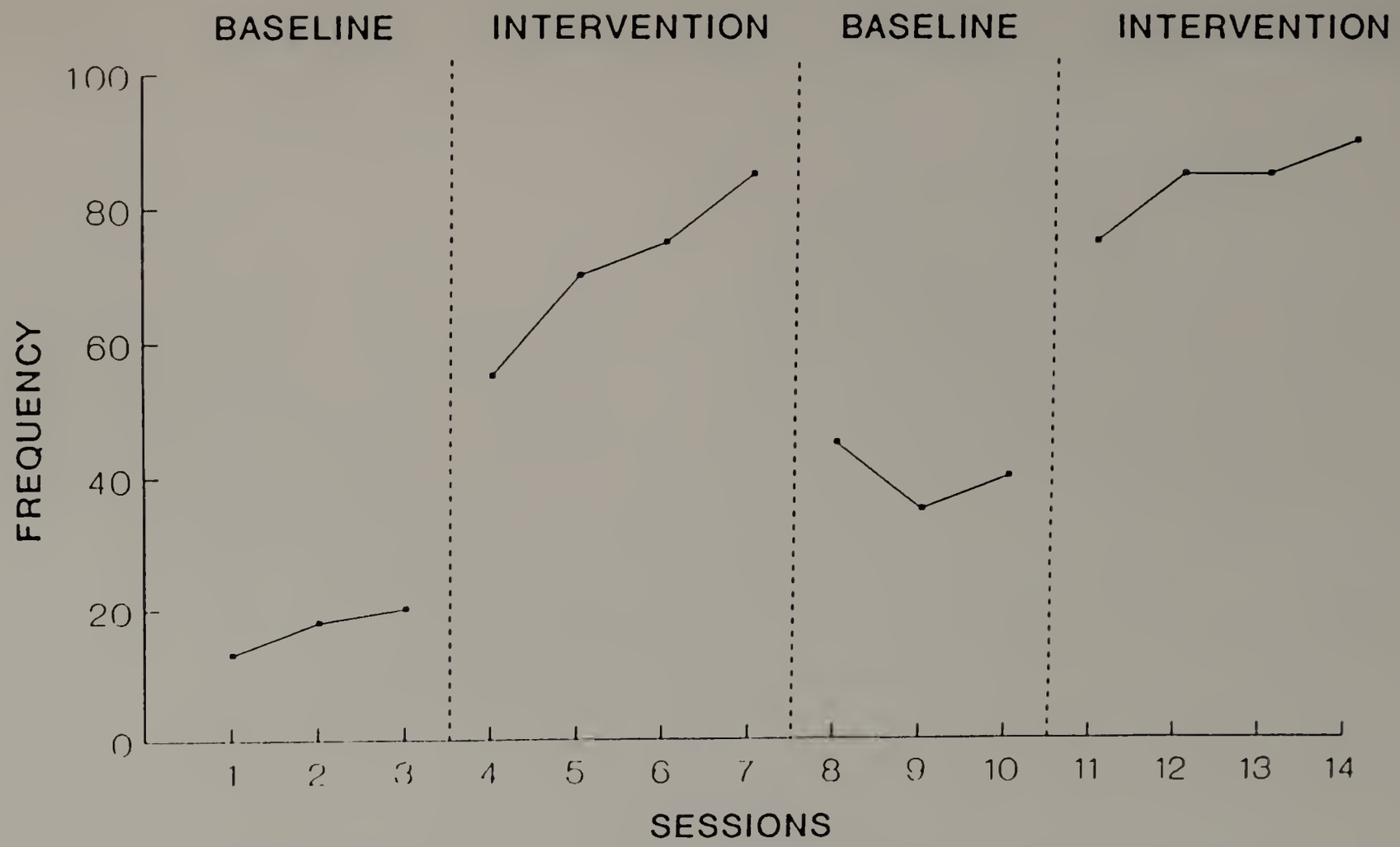

Figure 4. Percentage of intervals in which principal sets goals.

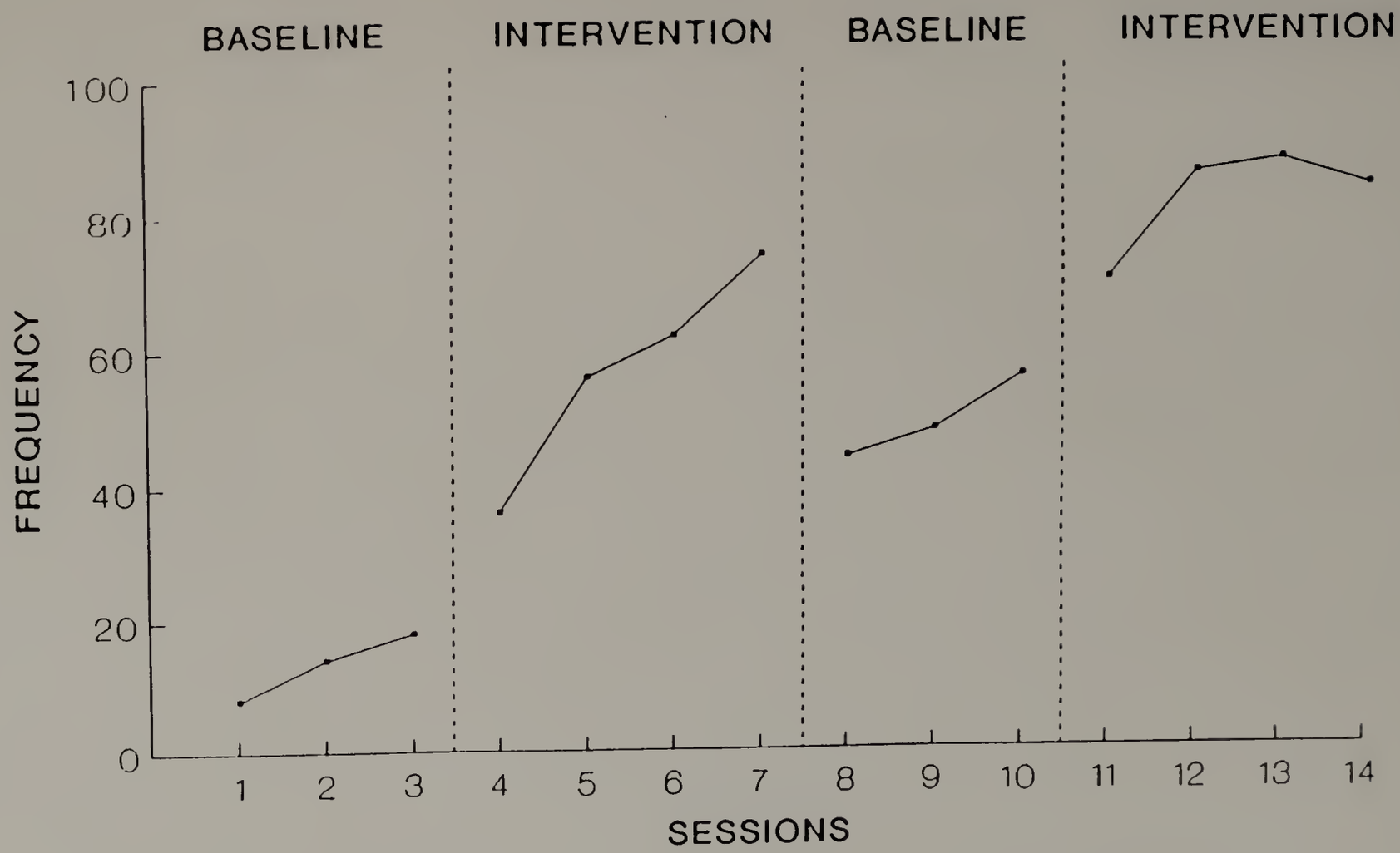

Figure 5. Percentage of intervals in which principal uses non-verbal feedback.

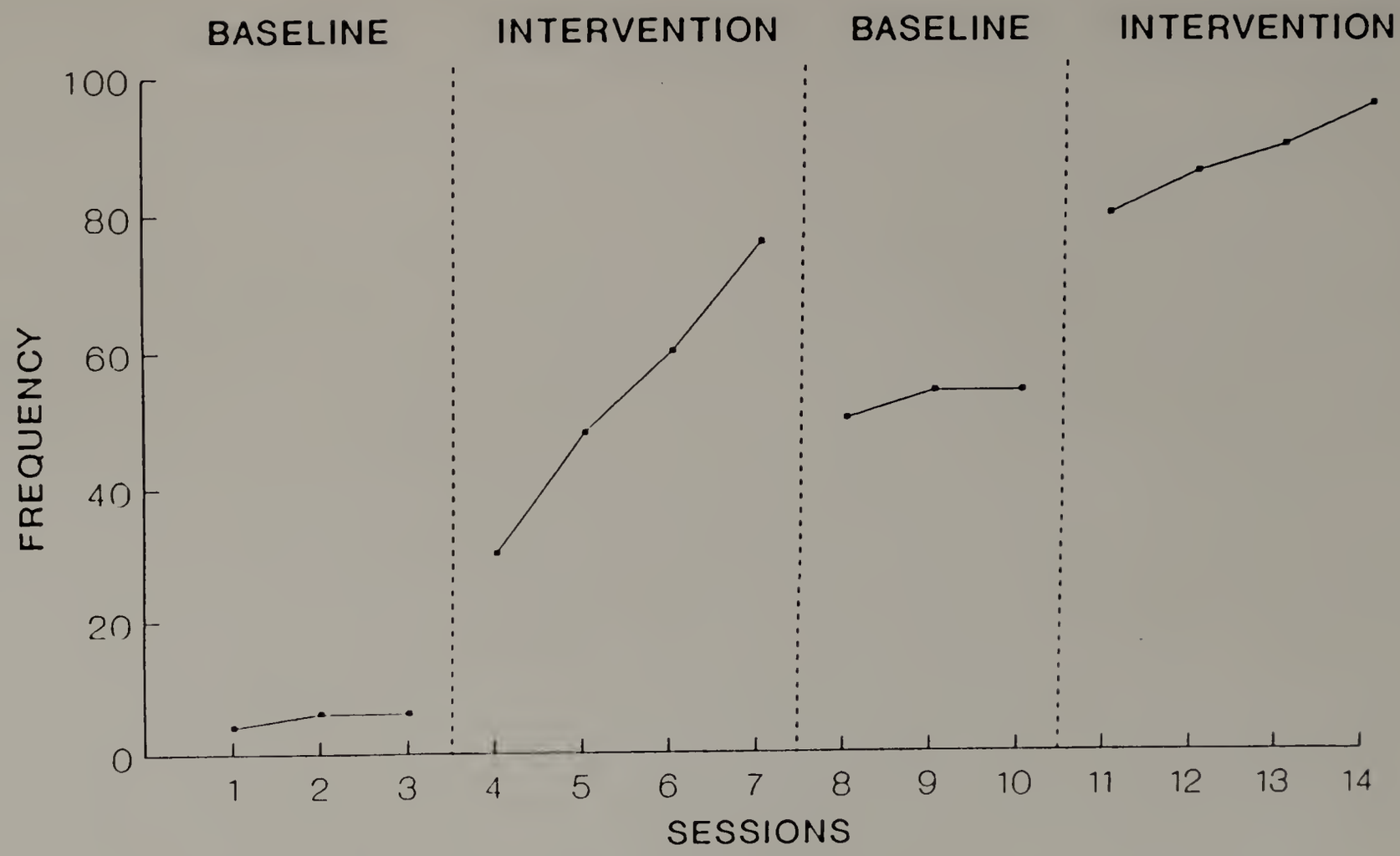

Figure 6. Percentage of intervals in which principal uses praise

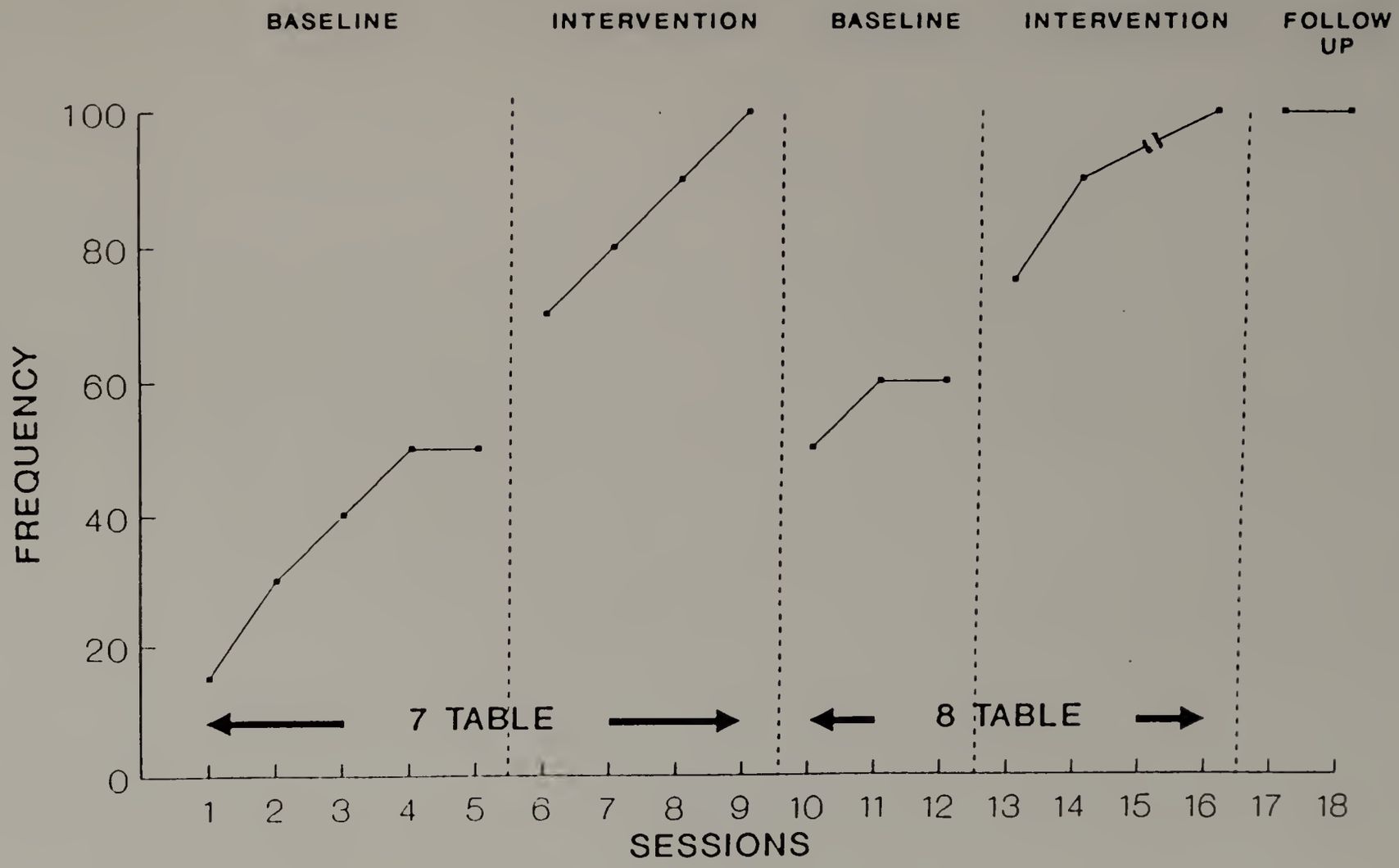

Figure 7. Student 1: Performance in quizzes on matriculation tables. The broken data line represents an unrecorded session because the student was absent.

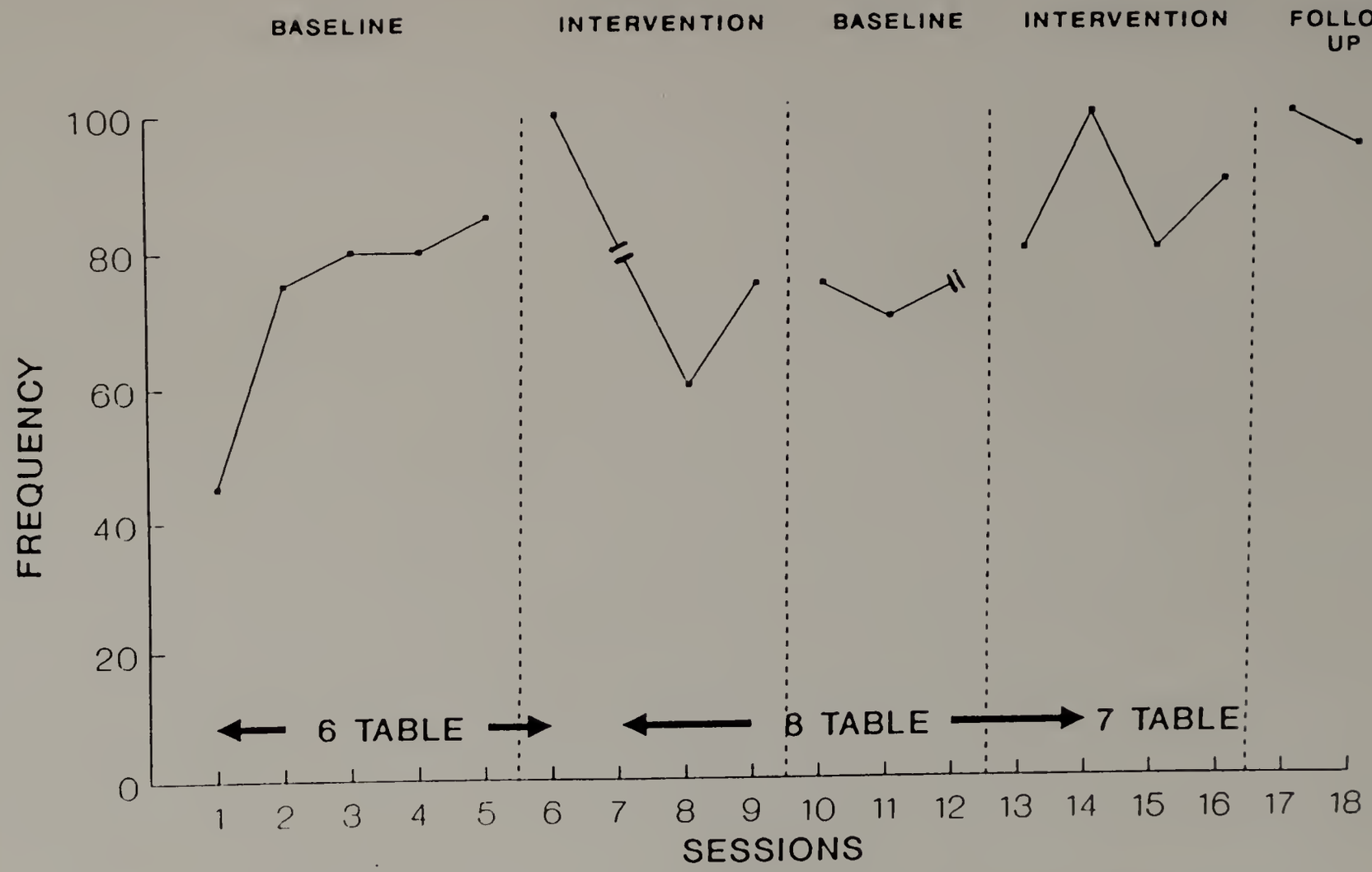

Figure 8. Student 2: Performance in quizzes on matriculation tables. The broken data line represents an unrecorded session because the student was absent.

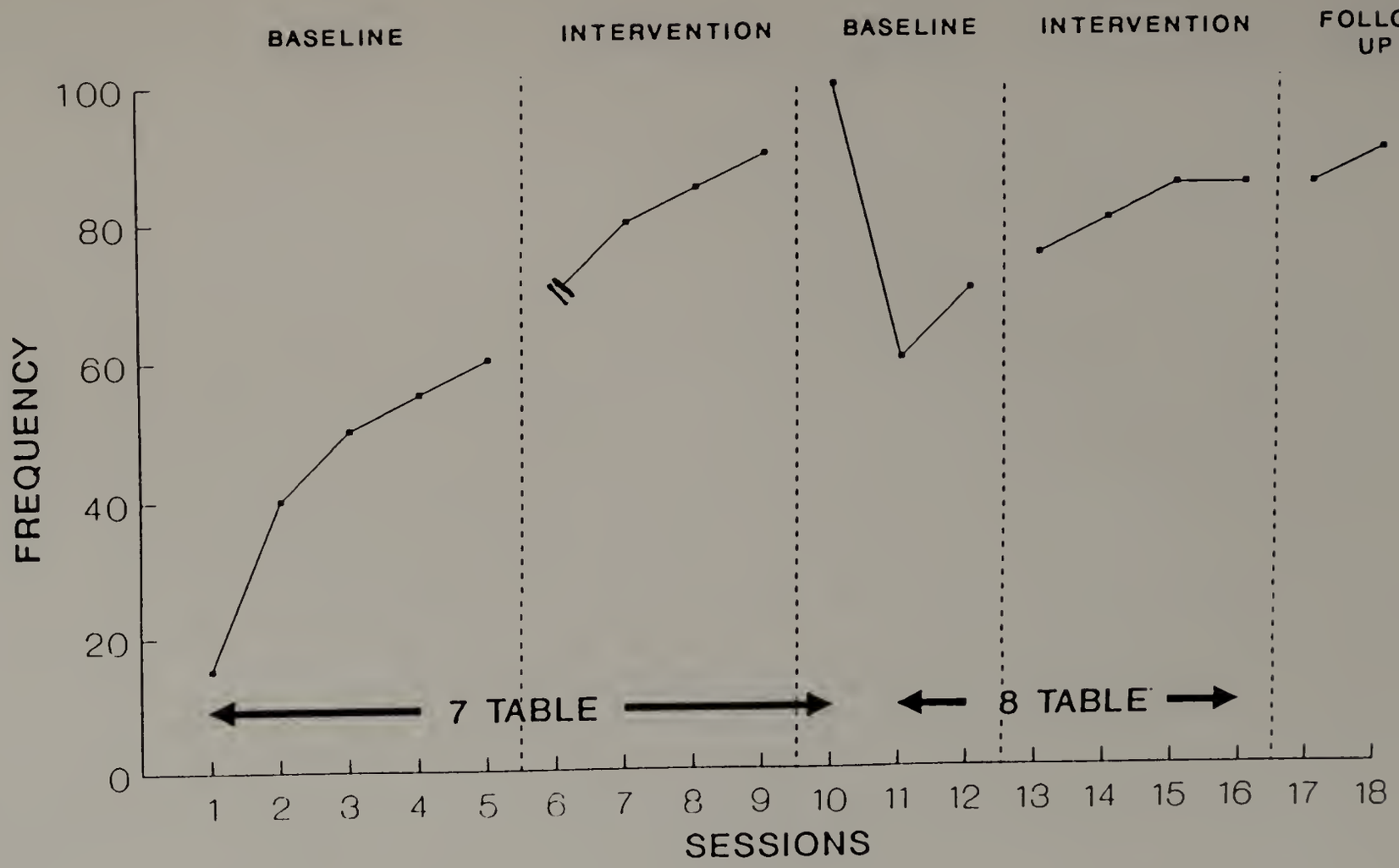

Figure 9. Student 3: Performance in quizzes on matriculation tables. The broken data line represents an unrecorded session because the student was absent.

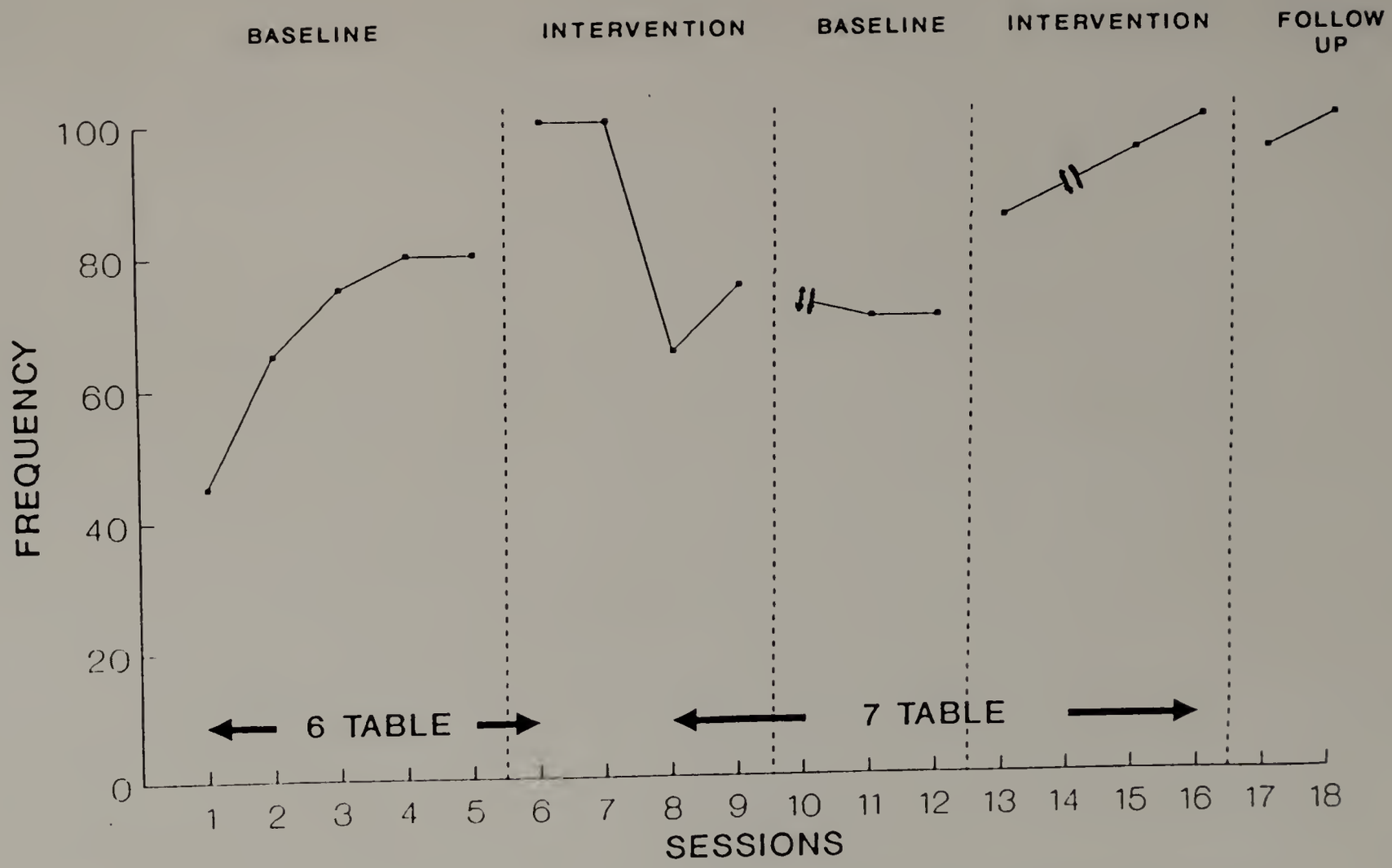

Figure 10. Student 4: Performance in quizzes on matriculation tables. The broken data line represents an unrecorded session because the student was absent.

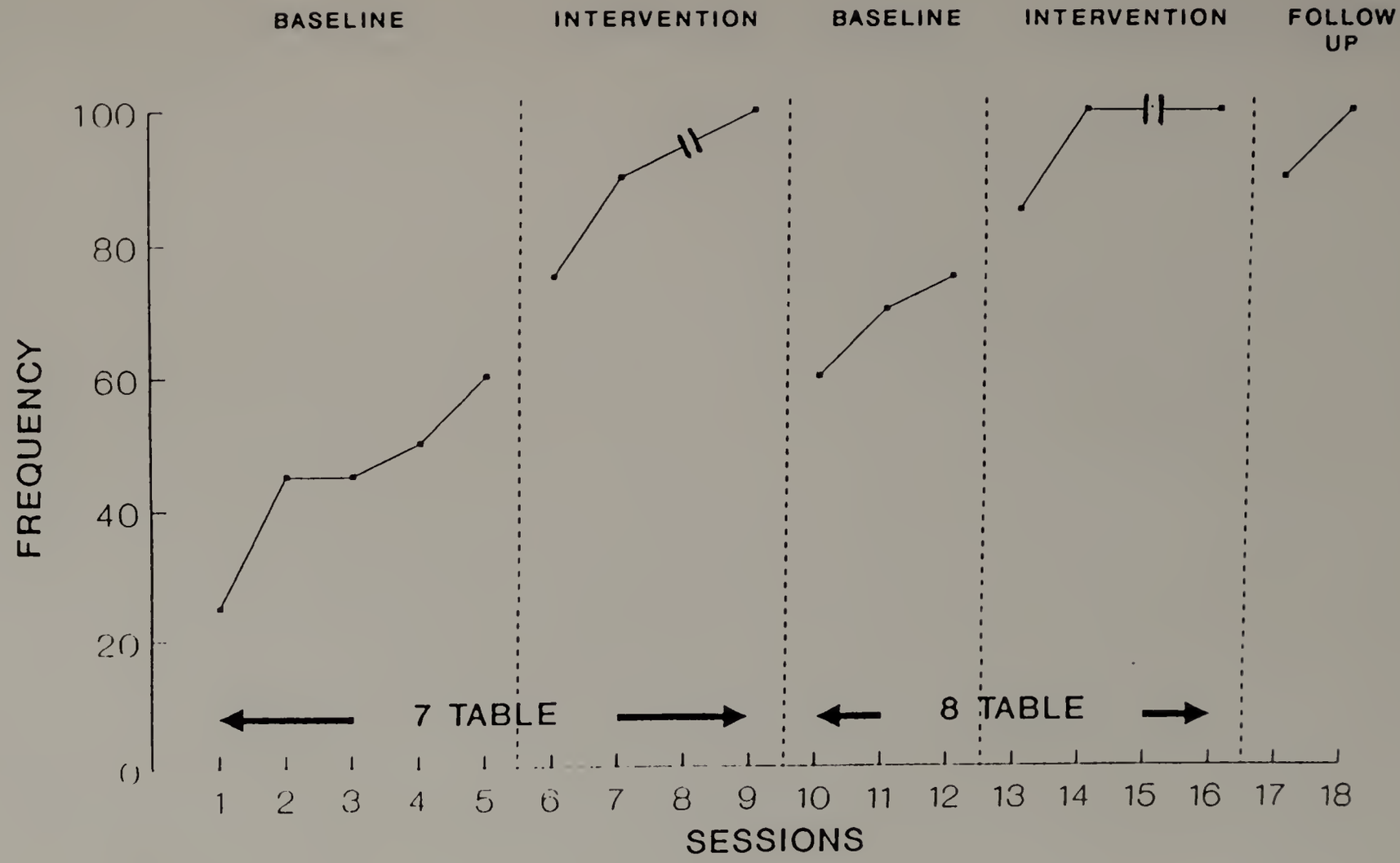

Figure 11. Student 5: Performance in quizzes on matriculation tables. The broken data line represents an unrecorded session because the student was absent.

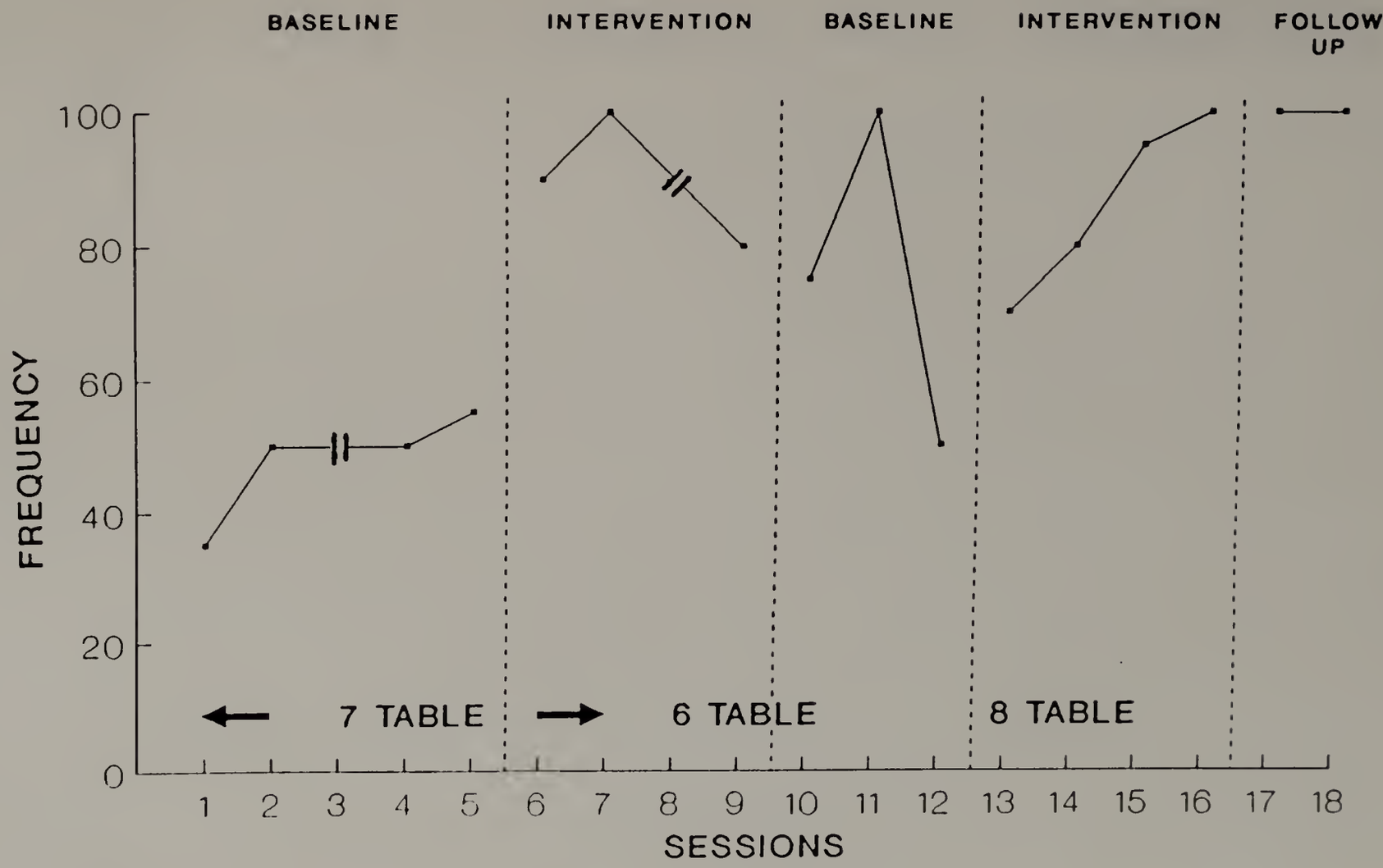

Figure 12. Student 6: Performance in quizzes on matriculation tables. The broken data line represents an unrecorded session because the student was absent.

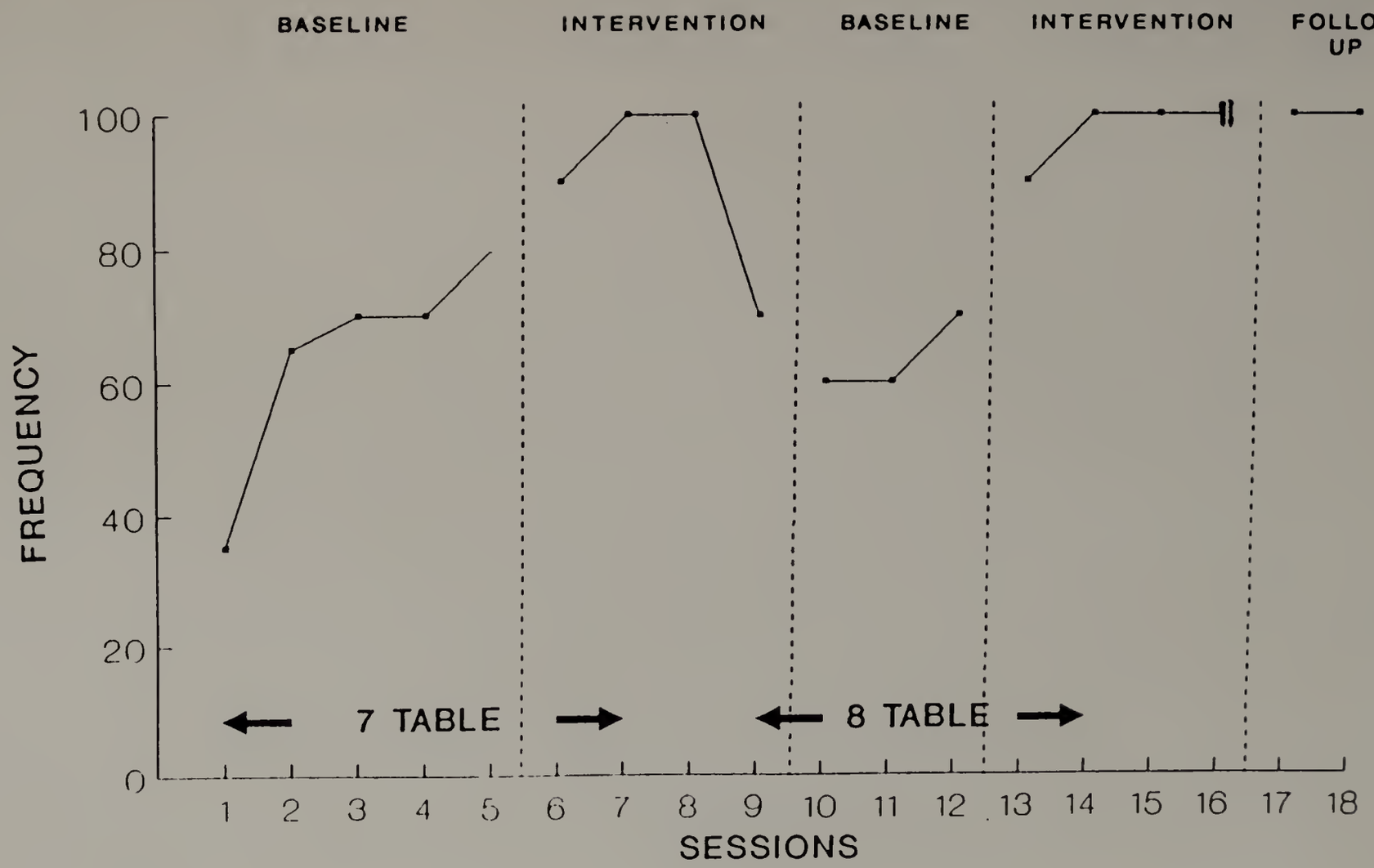

Figure 13. Student 7: Performance in quizzes on matriculation tables. The broken data line represents an unrecorded session because the student was absent.

Experiment II

Teacher Behavior

The data on observations of the teacher indicate an impressive change in her rate of positive comments and goal setting delivered to her students throughout the experiment, in both classes. (See figures 14-15.)

Goal setting

During the baseline phase, the rate was low, in the 5th period, the mean was .5 and in the 7th period, 2.8. When the principal emphasized and modeled the OBM procedures then - first in the 5th period and later, after several days, in the 7th period - an increase in the rate of goal setting's delivery occurred. The average during the 5th period increased to 15.8 and in the 7th climbed to 29.1. Even if these numbers are relatively low, comparing them to the starting points in both periods - close to 0 - provides a much clearer picture. It is also important to emphasize the rate of the increase, especially for the 5th period: more than thirty times that of baseline.

Non-verbal feedback

A similar trend of improvement occurred during the intervention. During the baseline phase, in the 5th period, the mean was 22, in the 7th period, 17.7. Throughout the

treatment conditions, the rate increased in both periods; in the 5th period to 40 and in the 7th period to 47.5. The ratio of the increase from the baseline was almost 3:1.

Verbal praise

Similar to the results in the first experiment the baseline of the verbal praise was lower than the non-verbal feedback: in the 5th period -- 6.5 (less than half of the rate of the non-verbal feedback) and, in the 7th period - 12. When the OBM procedures were introduced, the increase was considerable: in the 5th period 32.2, almost five times from the baseline and in the 7th period, 66.8, more than five times that of baseline.

Another key observation was that during the three parallel days at the end of baseline in 7th period and beginning of treatment conditions in 5th period the teacher's rate of using all three OBM procedures remained low but, was more consistent. Only when the intervention was applied directly to her in a very explicit way during the 7th period did the real increase in her rate occurs. Table 6, on the next page, which shows t-test values corroborates statistically the results mentioned previously.

Table 6

Statistical Significance of Teacher 2's Change of Behavior During Experiment II

Intervention	Phase	X_1	X_2	Period	t-Test Value	t Stat. Value	S.
Goal	Base. x Int.	0.5	15.8	5th	7.32	1.782	<.05
Setting	Base. x Int.	2.8	29.1	7th	13.14	1.314	<.05
Non-verbal	Base. x Int.	22	40.4	5th	9.06	1.782	<.05
Feedback	Base. x Int.	17.7	48.8	7th	14.56	1.314	<.05
Verbal	Base. x Int.	6.5	32	5th	13.92	1.782	<.05
Praise	Base. x Int.	12	67.7	7th	21.27	1.314	<.05

Base. = Baseline phase; Int. = Intervention phase

S. = Significance

Students' Reported Reading Rate

As mentioned earlier, the student-subjects in both 5th 7th periods were in remedial reading classes. One of the important targets in these classes was to guide the students toward a higher level of reading by increasing the time and quality of their reading. Figures 16-27 display the number of pages each reported reading silently daily.

During the baseline phase, the students in both periods were observed at the beginning of each day for 15 minutes,

while reading from their books. The average reading rate in 5th period was lower than the 7th period, 6.75 pages per 15 minutes.

After ten days, when the treatment conditions were introduced in the 5th period, the increasing trend in reading rate was apparent, with the average of the whole class reaching 9.66 - a ratio of 2.5:1 from the baseline.

Five days after the treatment conditions were introduced in the 5th period, the intervention began in the 7th period. During these five parallel days, the students remained at the same constant low level of reading. Only when the intervention was introduced, an increase in their rate occurred. The average reached 10.8, a ratio of 1.6:1 from the baseline.

During baseline, only one student read more than ten pages. After the intervention, all six achieved means higher than 10. This also occurred during the 5th period; except for one student, all others had read an average of 5 or less pages per day. With the treatment conditions, their mean rates increased to 10 or even higher. The t-test values demonstrate also the statistically significance of this change in the students' reported reading rates. (See Table 7.)

Table 7

Statistical Significance of Students' Change in Their Reported Reading Rates During Experiment II

Student	Phase	$\bar{X}_1$	$\bar{X}_2$	Period	t-Test Value	t stat. Value	S.
1	Base. x Int.	5.8	14.08	5th	7.26	1.697	<.05
2	Base. x Int.	4.9	10.36	5th	4.87	1.697	<.05
3	Base. x Int.	2.1	8.4	5th	8.18	1.697	<.05
4	Base. x Int.	2.3	8	5th	9.82	1.697	<.05
5	Base. x Int.	3.25	6	5th	1.51	1.812	>.05
6	Base. x Int.	6.7	11.52	5th	7.89	1.697	<.05
1	Base. x Int.	10.06	17.7	7th	6.67	1.697	<.05
2	Base. x Int.	7.8	14.6	7th	8.27	1.697	<.05
3	Base. x Int.	5.2	10.3	7th	7.08	1.697	<.05
4	Base. x Int.	6.8	13.7	7th	3.47	1.747	<.05
5	Base. x Int.	6.7	16.2	7th	8.62	1.697	<.05
6	Base. x Int.	4.06	10.5	7th	7.24	1.697	<.05

Base. = Baseline phase; Int. = Intervention phase

S. = Significance.

As mentioned initially, verbal praise, non-verbal feedback and goal setting were delivered by the principal and, later on, by the teacher. Of special interest are the

days in which the teacher was the only one to deliver the intervention. During most of those days, the students either increased their rates after her intervention or, at least, remained at the previous day's level. (Recall that the teacher's own rate of verbal praise, non-verbal feedback and goal setting increased after the OBM training session and the principal's modeling.) Students' reading rates continued to improve after the principal's intervention, as well.

As seen from the results, rate of reading by students in the 5th period was lower than that of the 7th. As a matter of fact, it was the lowest among all five periods this teacher taught during the day. Three students, 3, 4 and, 5, had been the most problematic in the class, in term of their behavior, attendance and academics. Two of those students, 3 and 4, increased their reading rates to a greater extent than all the students from both periods: student 3, from an average 2.1 in the baseline to 8.4, a ratio of 4:1 (the highest ratio of all students); student 4, from average of 2.3 in baseline to 8, a ratio of 3.47:1 (second best of all students). Even student 5, who was absent 2/3 of the experimental period during the treatment phase, showed improvement over the baseline. Twice, when he was present during the teacher's intervention, he improved his rates the very next day.

The results of students' on-task behavior, observed during the silent reading period by the PLACheck recording system, were relatively constant during all the experiment. On average, the students were on-task 98% during the 15 minutes of the silent reading; most of the time, the score was 100%.

Summary of Major Findings in Exp. II

1) Following the OBM training session, the principal's modeling of giving feedback, praise and setting goals for the students plus receiving her own feedback and praise from the principal and from the researcher, the teacher's rate of verbal praise, non-verbal feedback and goal setting increased

2) Students' academic performance, in terms of number of pages read daily, increased after the OBM procedures were applied by the principal or by the teacher.

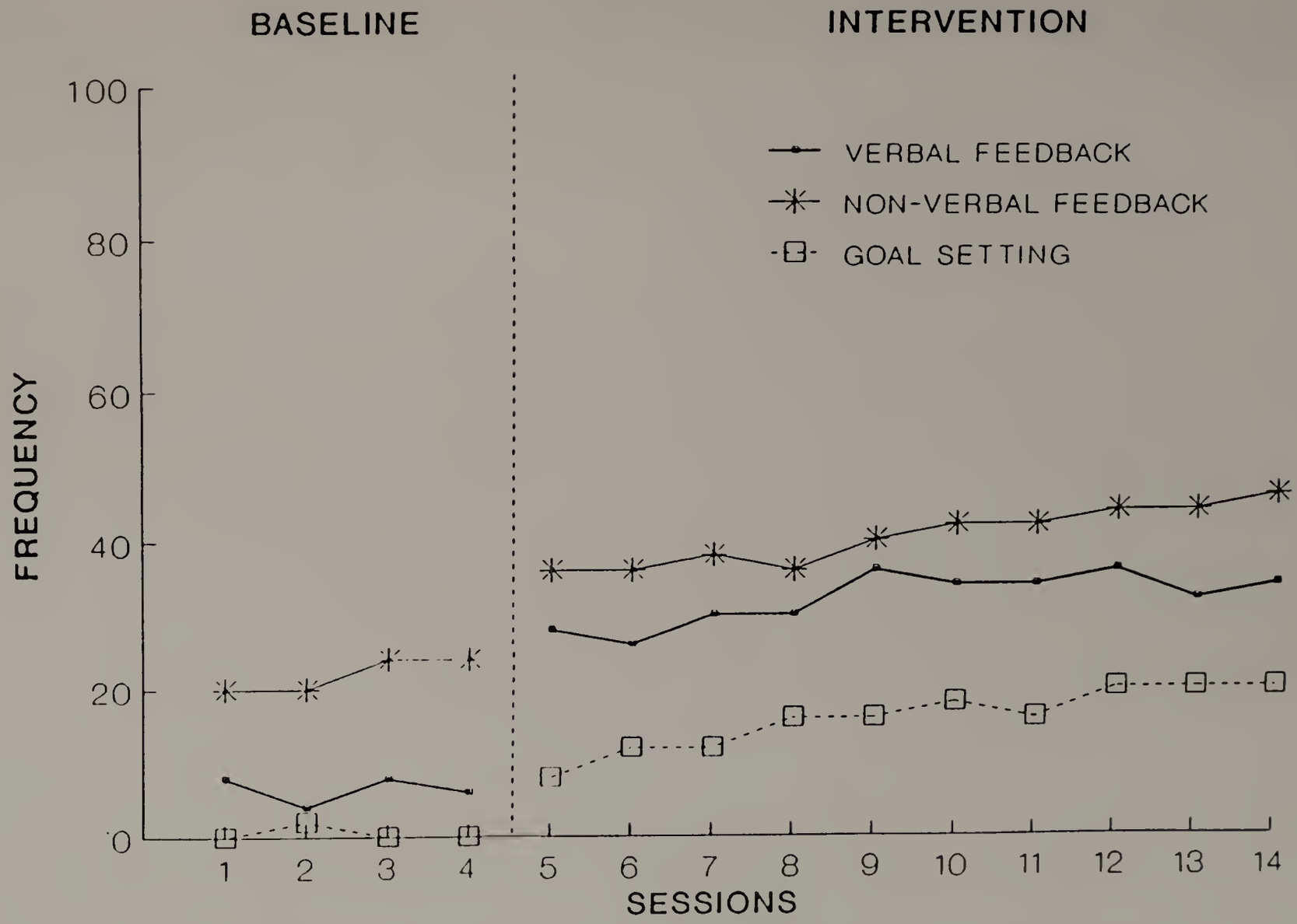

Figure 14. Percentage of intervals in which teacher sets goals and uses praise and non-verbal feedback, in the 5th period.

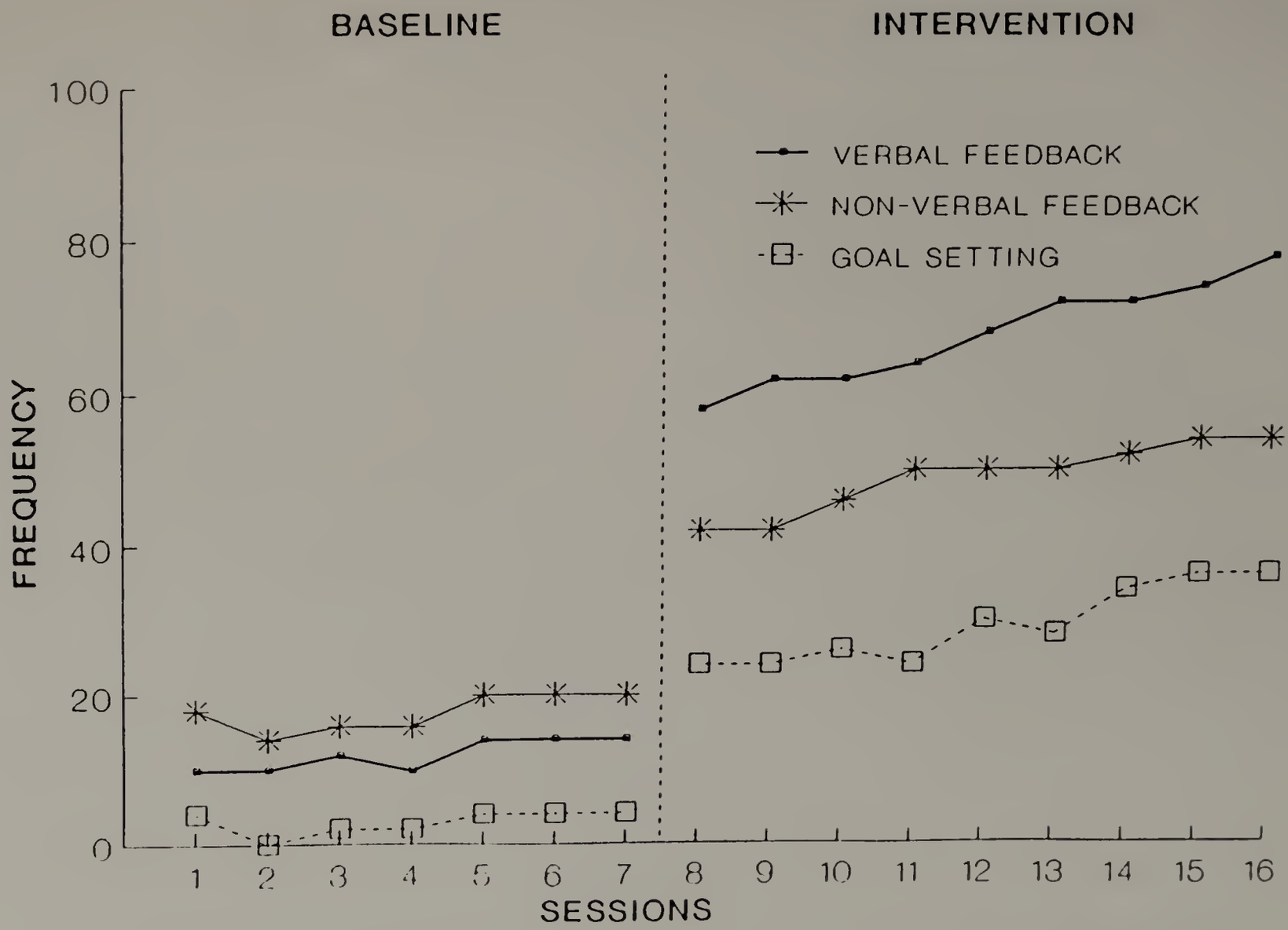

Figure 15. Percentage of intervals in which teacher sets goals and uses praise and non-verbal feedback, in the 7th period.

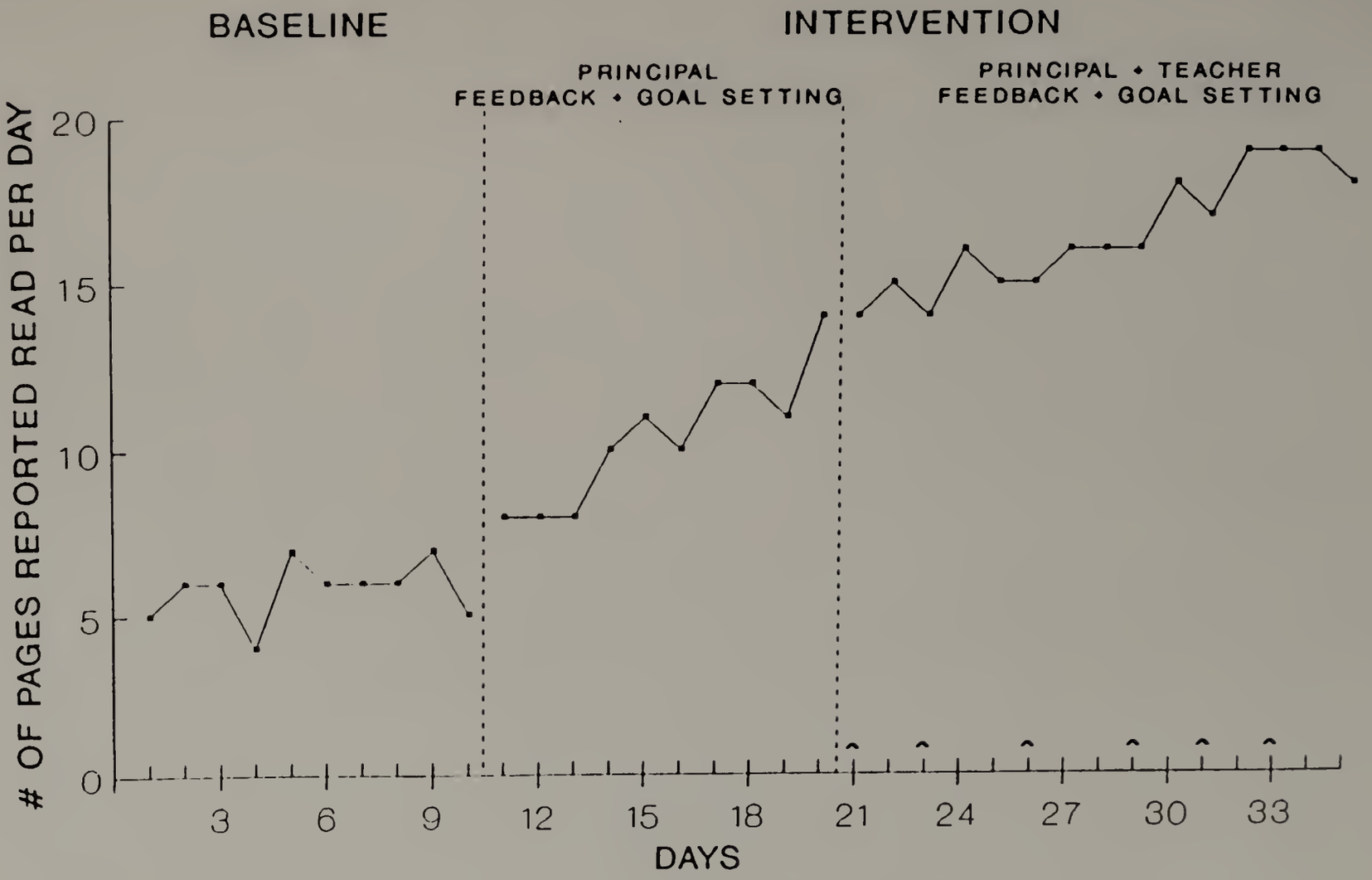

Figure 16. Student 1: Number of pages reported read during 5th period. The arrows represent teacher's intervention.

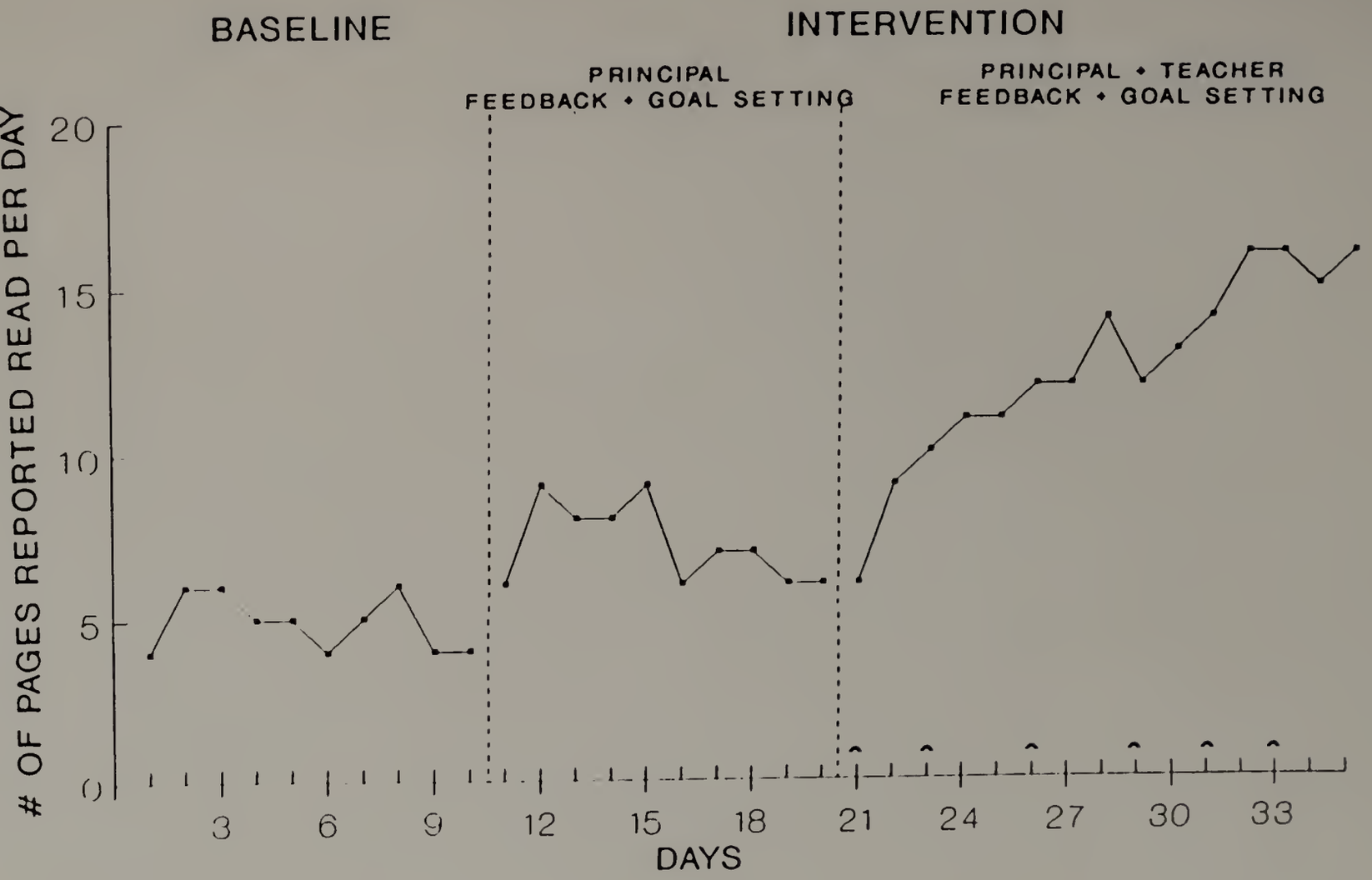

Figure 17. Student 2: Number of pages reported read during 5th period. The arrows represent teacher's intervention.

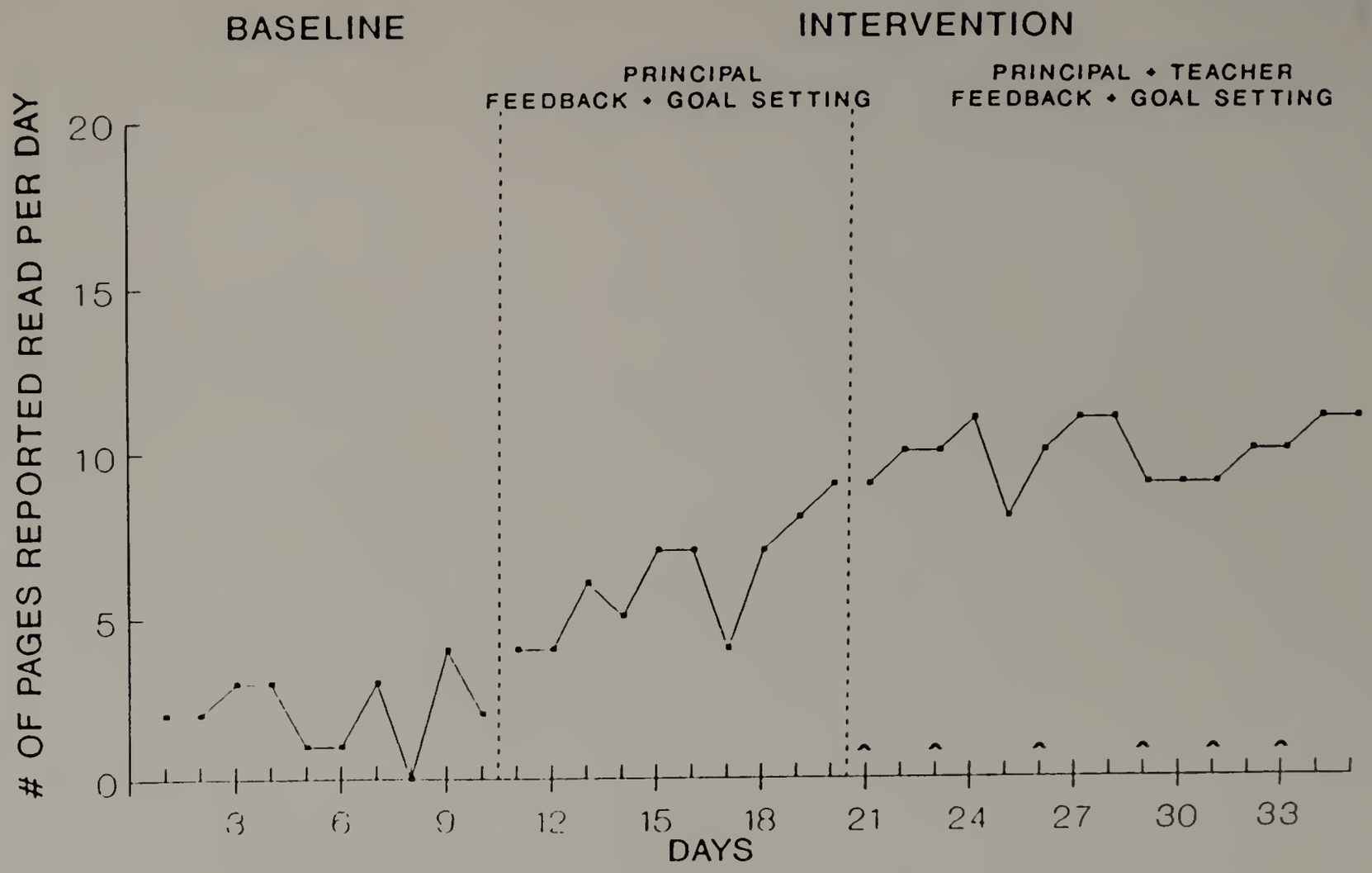

Figure 18. Student 3: Number of pages reported read during 5th period. The arrows represent teacher's intervention.

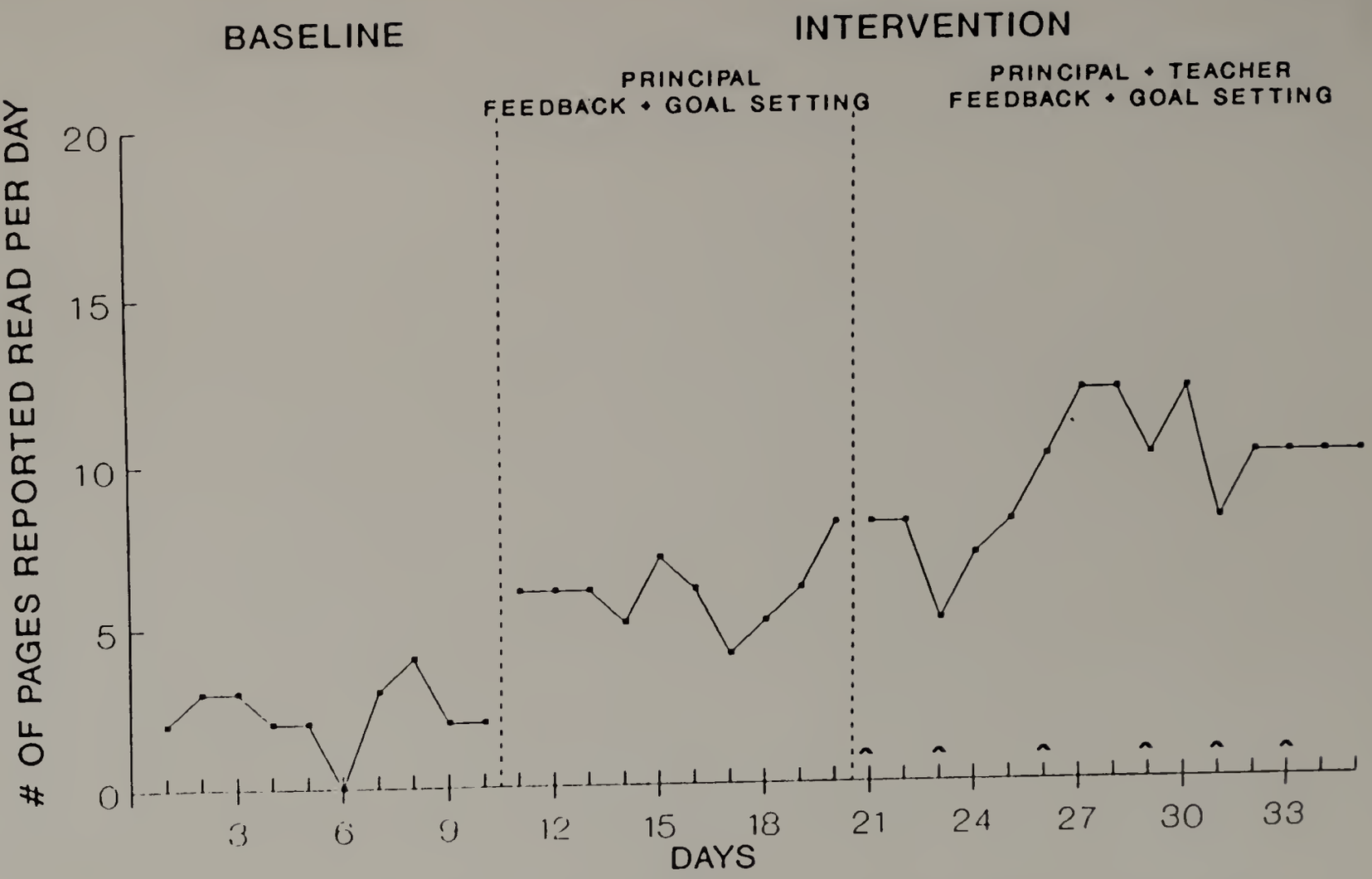

Figure 19. Student 4: Number of pages reported read during 5th period. The arrows represent teacher's intervention.

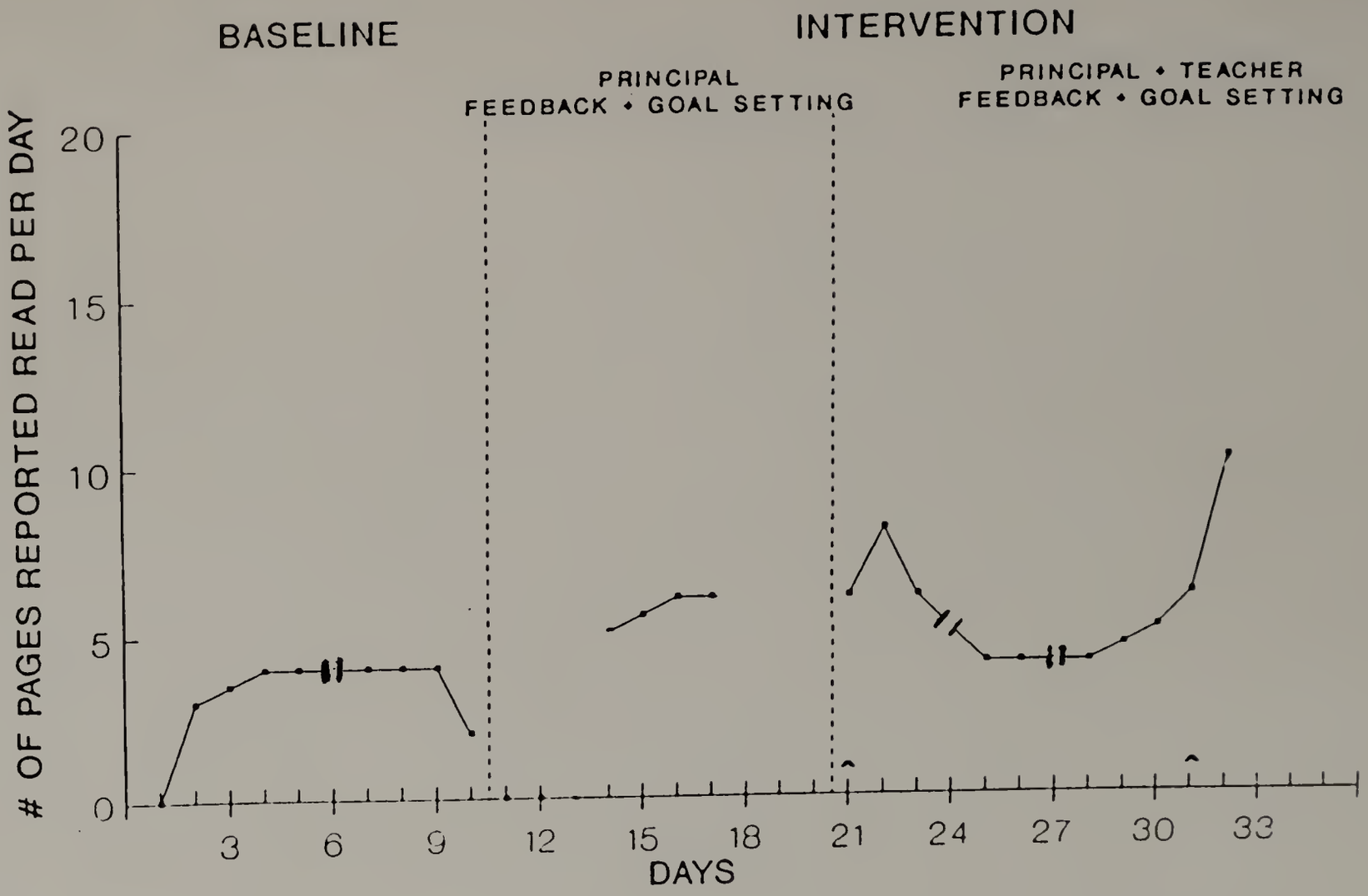

Figure 20. Student 5: Number of pages reported read during 5th period. The arrows represent teacher's intervention.

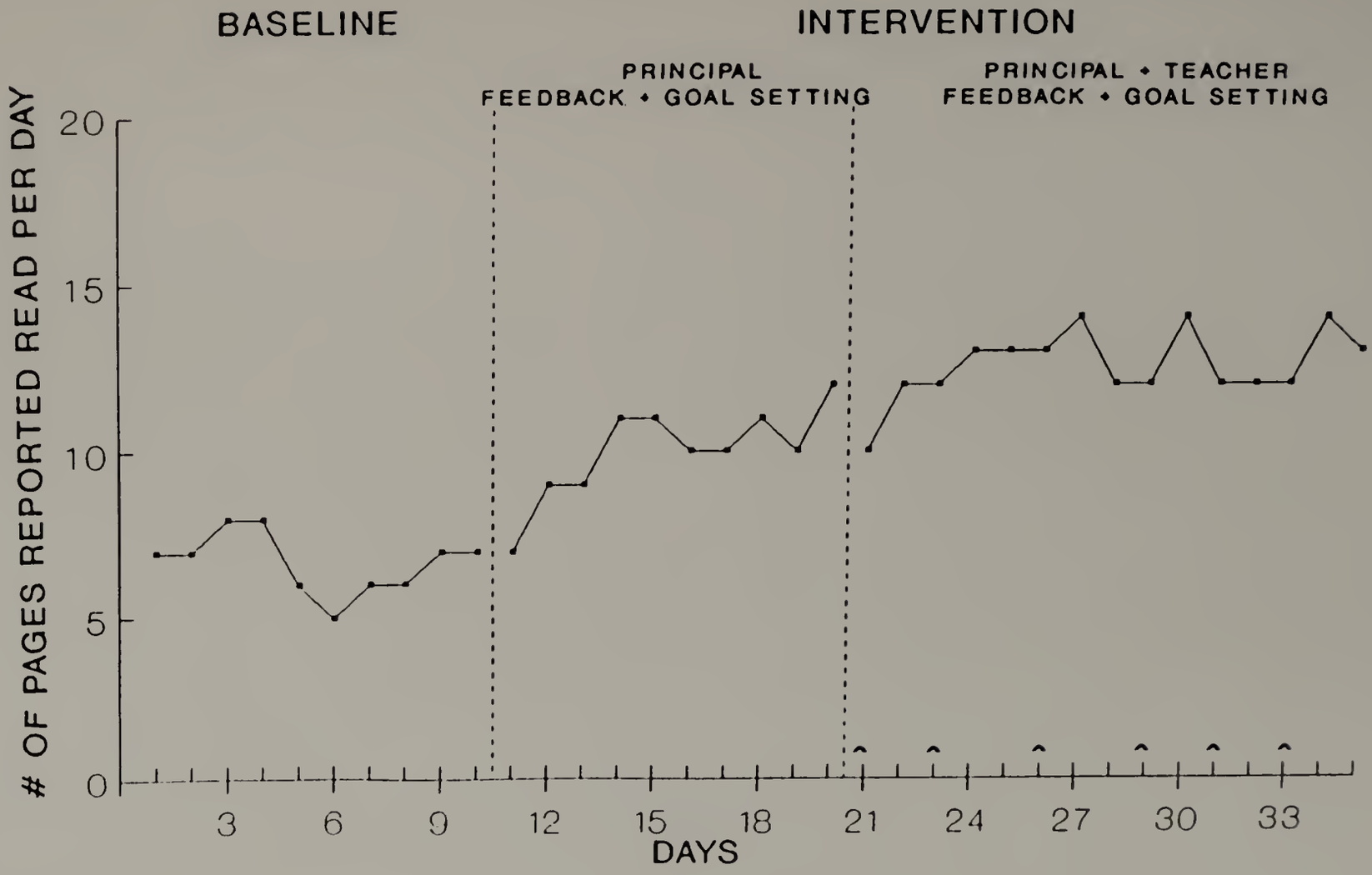

Figure 21. Student 6: Number of pages reported read during 5th period. The arrows represent teacher's intervention.

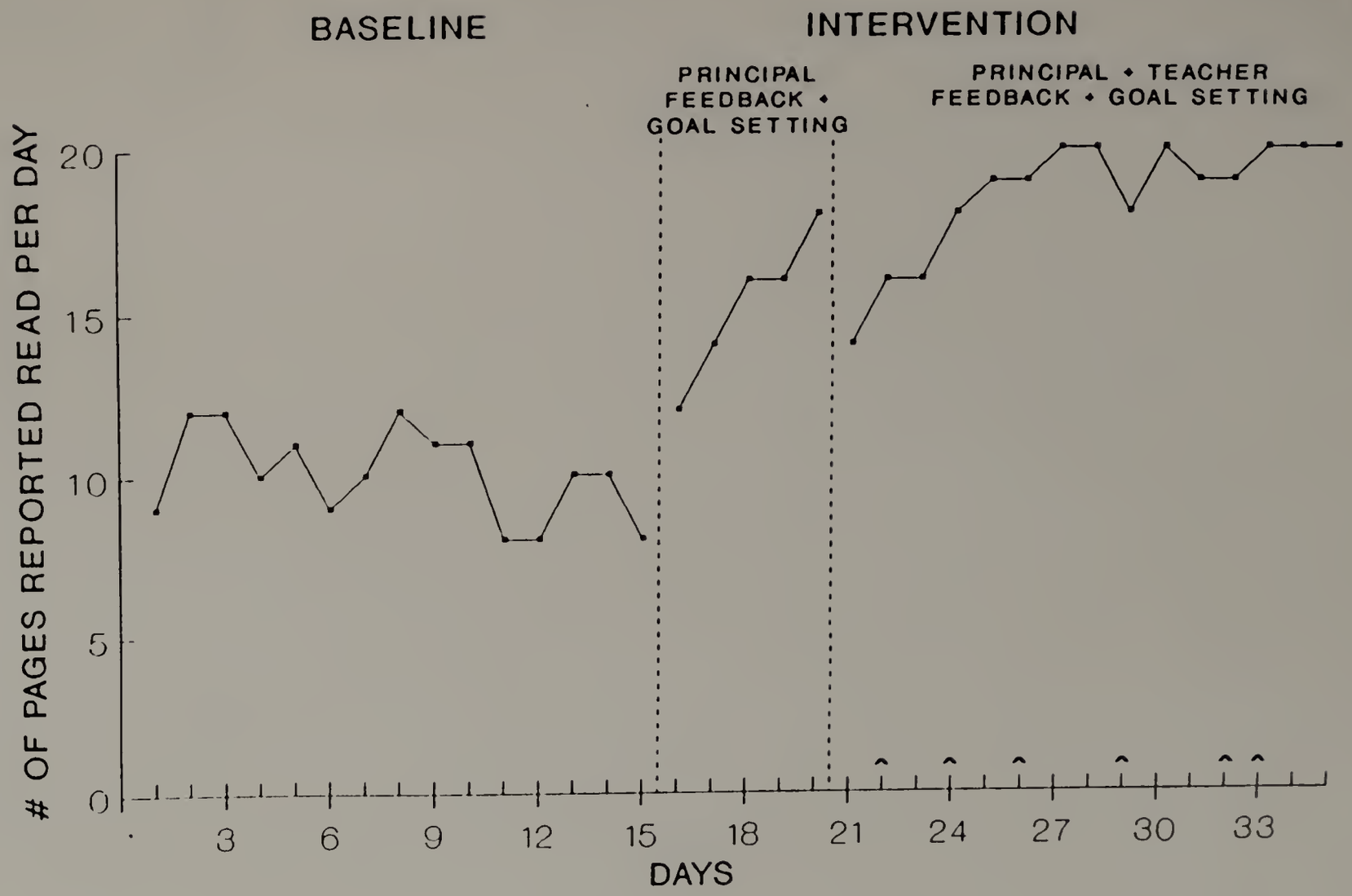

Figure 22. Student 1: Number of pages reported read during 7th period. The arrows represent teacher's intervention.

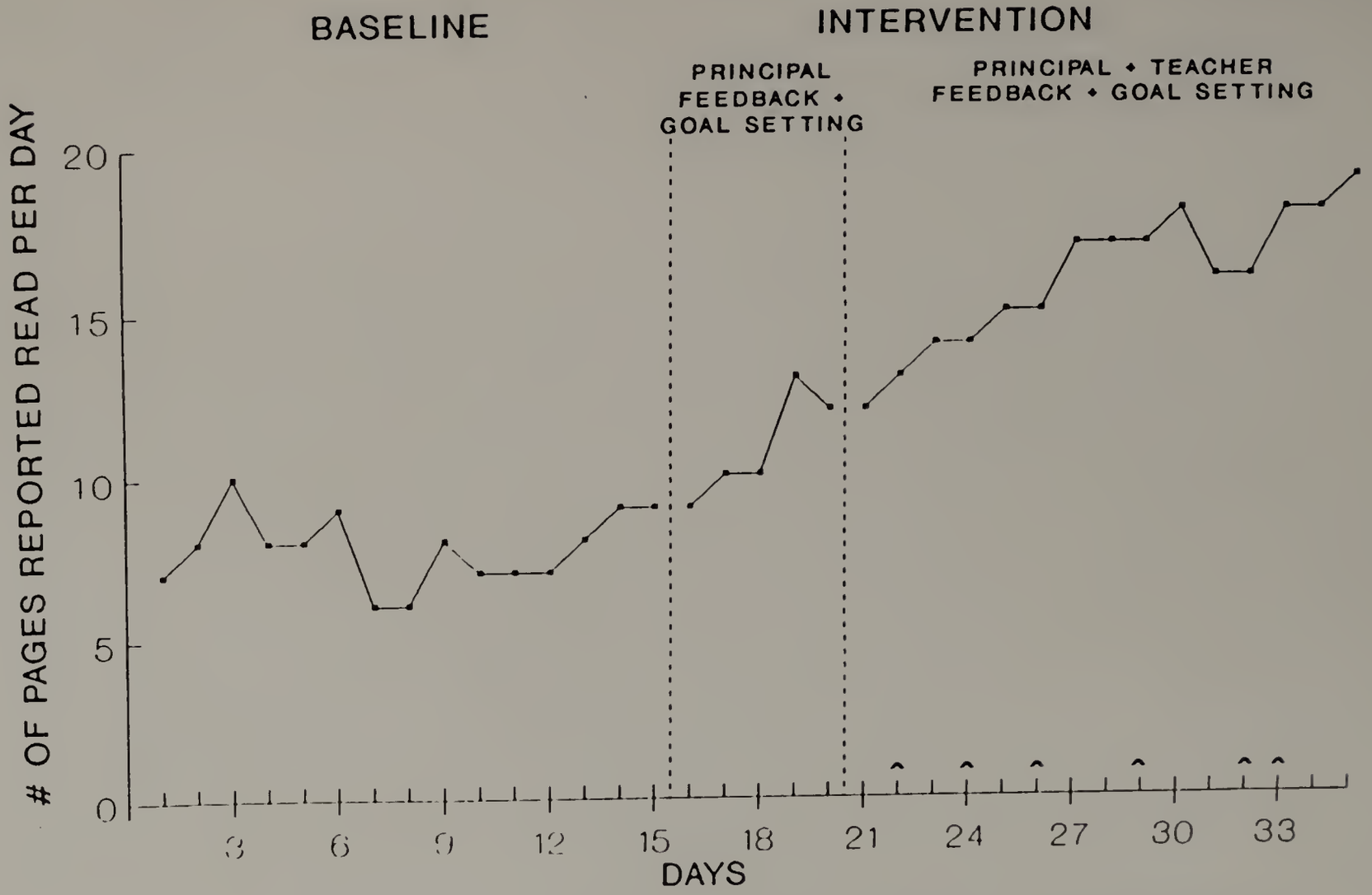

Figure 23. Student 2: Number of pages reported read during 7th period. The arrows represent teacher's intervention.

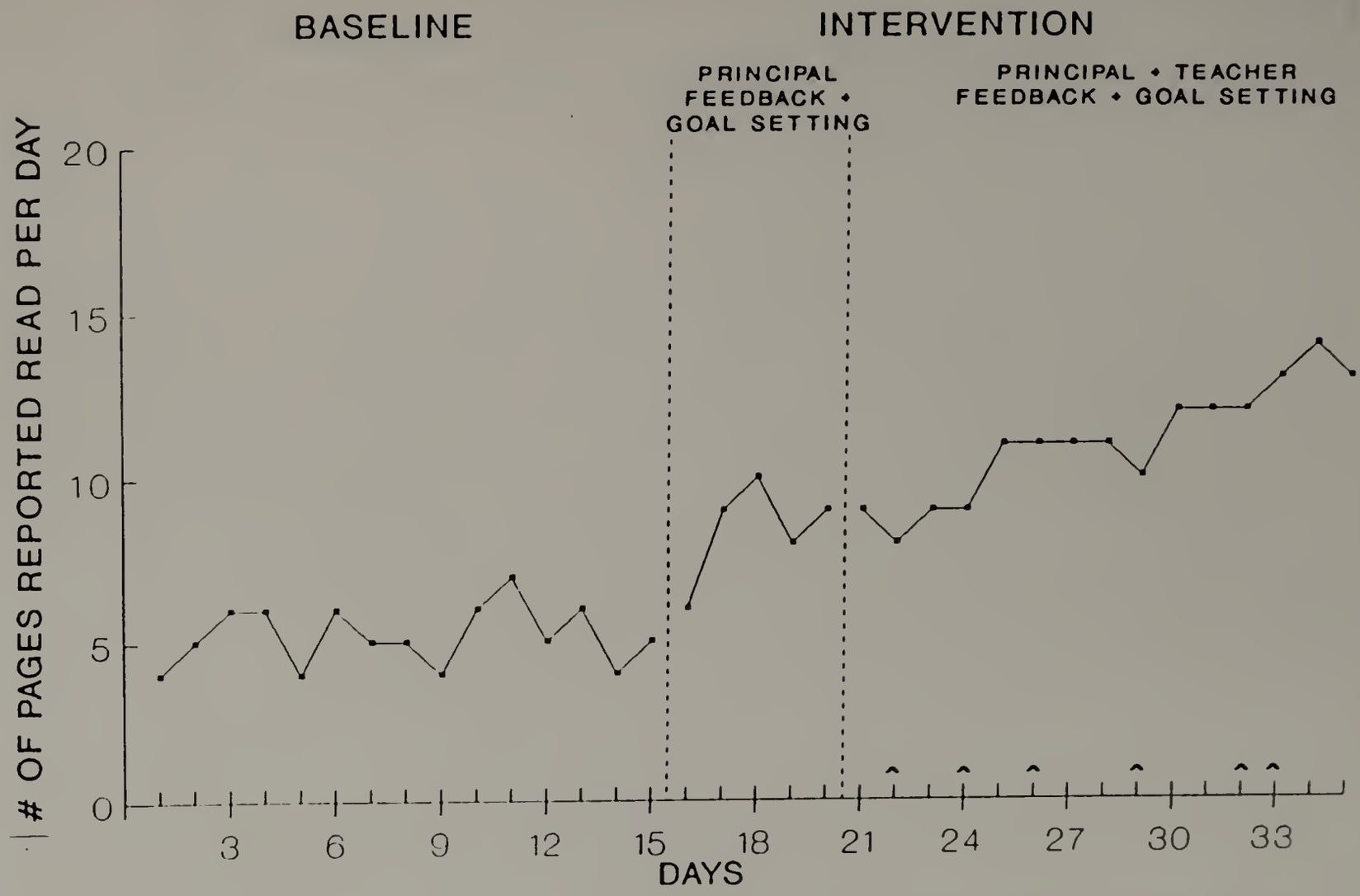

Figure 24. Student 3: Number of pages reported read during 7th period. The arrows represent teacher's intervention.

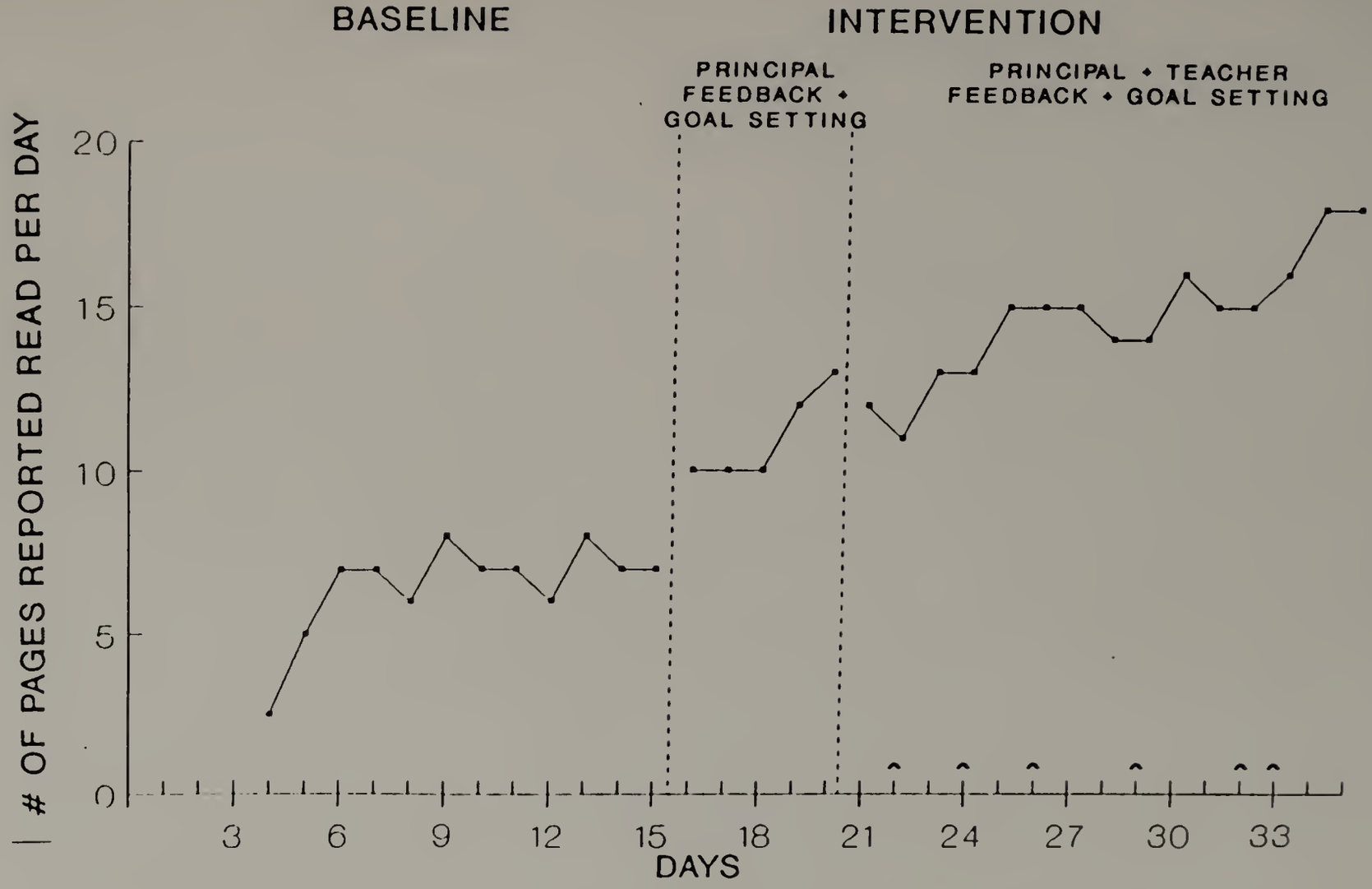

Figure 25. Student 4: Number of pages reported read during 7th period. The arrows represent teacher's intervention.

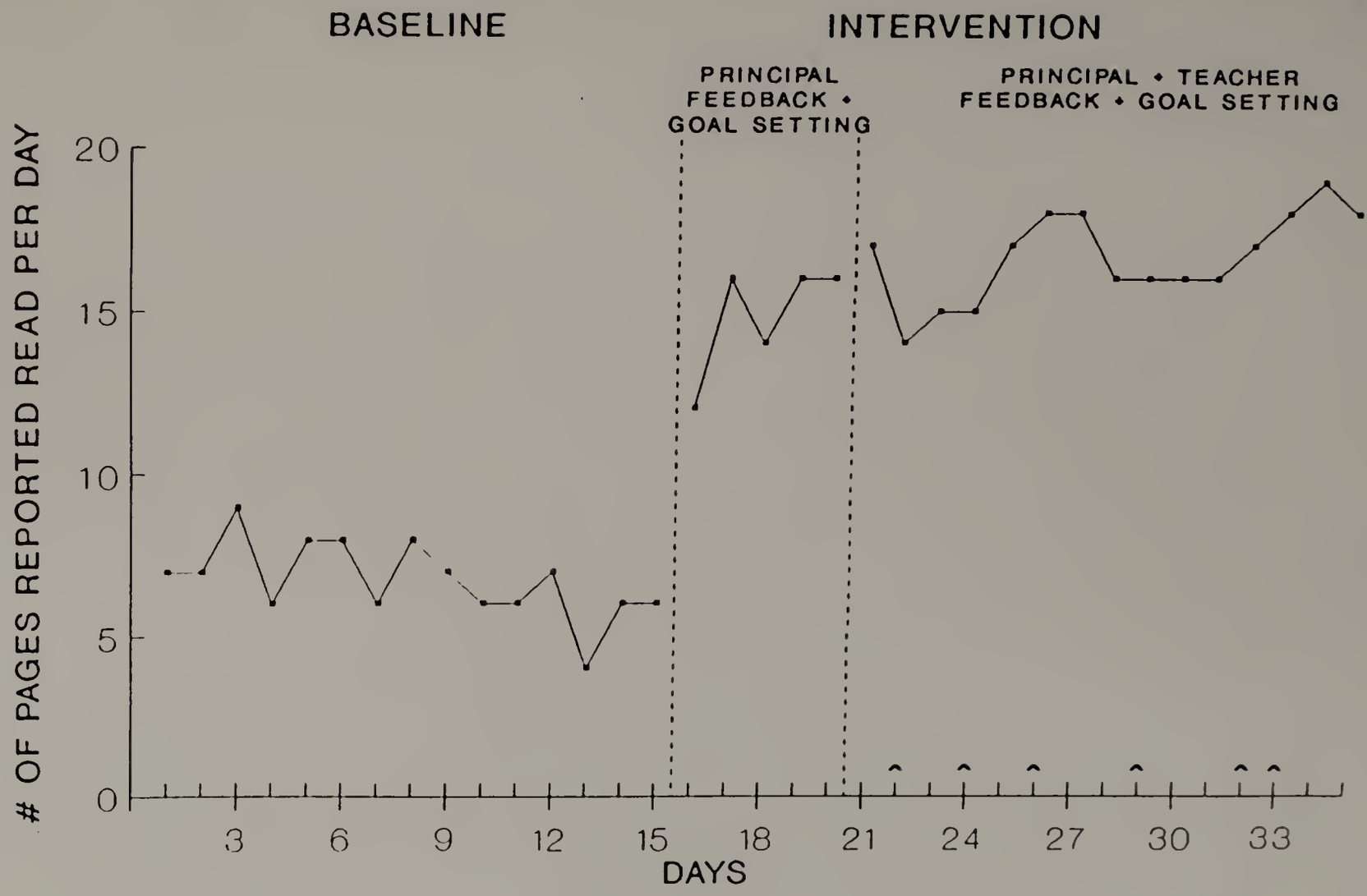

Figure 26. Student 5: Number of pages reported read during 7th period. The arrows represent teacher's intervention.

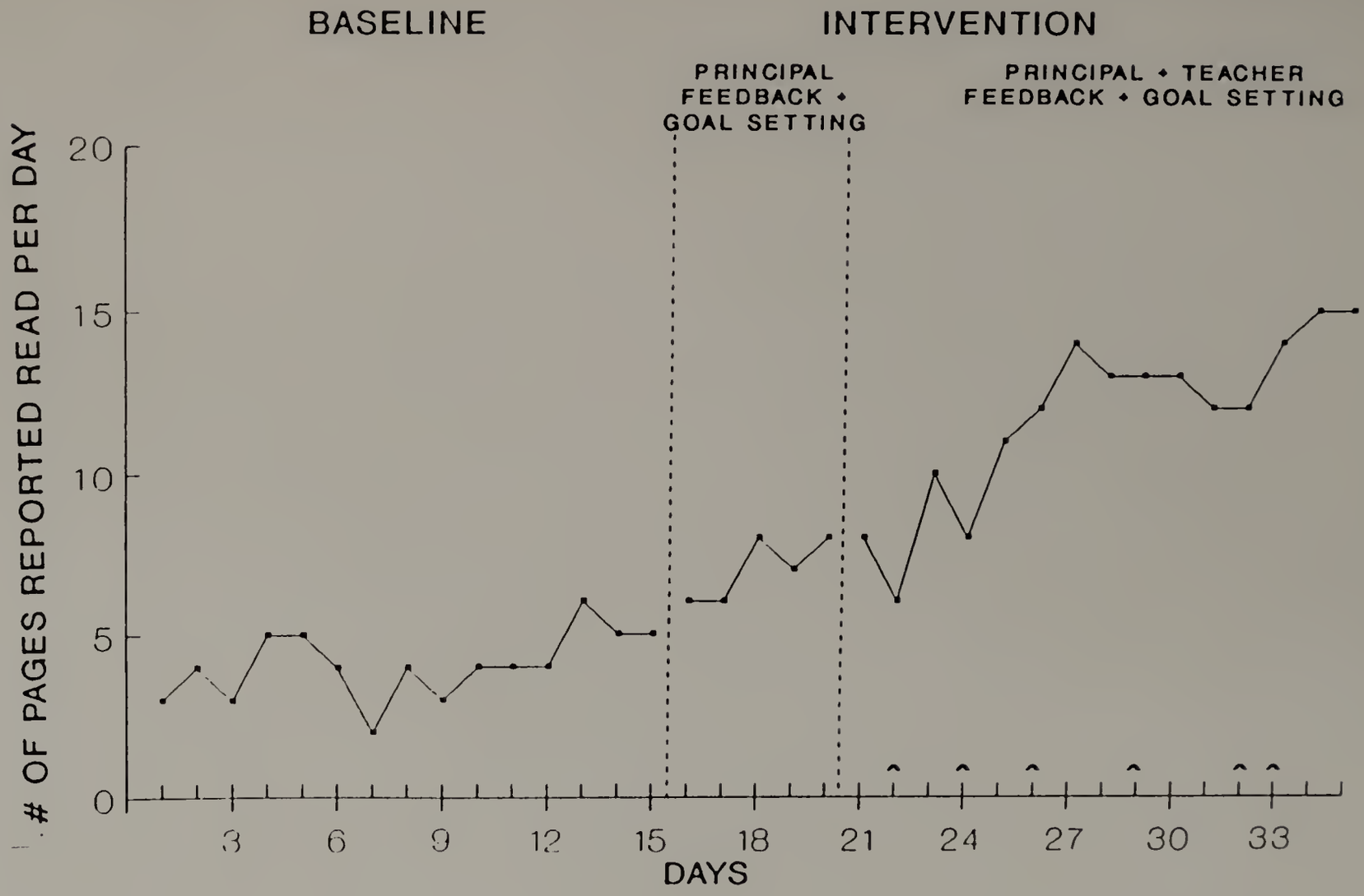

Figure 27. Student 6: Number of pages reported read during 7th period. The arrows represent teacher's intervention.

CHAPTER V

DISCUSSION

The effectiveness of applying OBM procedures with both principals, the teacher and a number of students was demonstrated. The OBM training sessions appear to have increased the rates of verbal praise, non-verbal feedback and goal setting for the two principals. The results also indicated that these procedures appeared to have had a great impact on the students' academic performance, in terms of their math and reading skills. The positive effects of the principal and teacher's praise, feedback and goal setting in this research parallel results of many others who have shown similar effects of experimenter's praise, feedback and goal setting on increasing the target behavior. This research has demonstrated that the principals' application of OBM procedures can provide an important form of instructional leadership needed in classrooms.

Many observational and procedural issues were already discussed previously but, several merit further consideration. The two schools chosen, were different in terms of their levels: one was an elementary school (A) and the other a middle school (B). In spite of this difference, the introduction of OBM procedures increased academic performance in both schools. As mentioned in the review of literature, most of the previous studies had been performed

at the elementary level while very few took place at higher levels. The systematic replication employed in the second experiment was important for the substantiation of the first experiment's findings. As mentioned by Sidman (1960): "As a tool to establish reliability, the experimenter will use the data collected previously as a basis for performing new experiments and obtaining additional related data.... Every successful systematic replication demonstrates that the finding in question can be observed under conditions <u>different</u> from those prevailing in the original experiment. Systematic replication can accomplish generality and, at the same time, extend its generality over a wide range of different situations. If it is successful, the pay-off is handsome. Not only is the reliability of the original finding increased, but also its generality with respect to other organisms and to other experimental procedures is greatly enhanced." (p. 111-112)

The results of this research illustrate the systematic effect of OBM procedures on the performance of students at the middle school level, as well as at the elementary level. Students aged 12 or older improved their rates of silent reading as a function of the use of proper feedback, praise and especially by setting realistic goals. Again, to emphasize the importance of the success in the elementary school, recall that weeks and months of endless efforts had

been spent in vain without the student-subjects learning their multiplication tables. Only a few days after the OBM procedures were implemented, however, the students began to master the tables.

Implementing the OBM procedures with the teacher increased her rates of verbal praise, non-verbal feedback and goal setting. Additionally, a much more important behavioral change occurred: her new skill generalized. The teacher decided to post additional charts, for all her classes, resembling the wall-chart example that had been designed by the researcher. The wall-charts were used to record the "at home reading time" students reported. The results were impressive and again, demonstrated the usefulness of OBM procedures. By spending a few more minutes, daily to practice these OBM procedures she reported improvement in the academic performance of her students within a relatively very short period of time. (See Appendix E.) Needless to say, while this teacher used these OBM procedures on reading rate, the methods readily lend themselves to application in many other fields of knowledge.

The effect of the study on the performance of the principals was also quite impressive. As discussed in the introduction, the main purpose of the research was to investigate the potential for using OBM procedures to increase the leadership skills of educational

administrators. This research demonstrated one way the principal can perform a crucial instructional leadership role in the school. In these two schools, OBM procedures were implemented to the principals and by them to:

1) influence students' behavior and academic performance, either directly and/or indirectly via the teaching staff; and

2) influence the teacher's performance by delivering specific feedback, praise and by setting goals. (The anticipated improvement in the teaching atmosphere, ultimately resulted in higher levels of student academic performance).

As mentioned in the review of the relevant literature, among the characteristics of the effective principal, can be found: a) High visibility in the classrooms and hallways of the schools (Benjamin, 1981; Sweeney, 1981); b) Frequent monitoring of pupil progress and clear statement of goals and learning objectives (Edmonds, 1978; Pinero, 1982); and c) Concentration of time and effort on instructional matters and participation with teachers in inservice training (Jansen, 1967; Pinero, 1982; Sweeney, 1981) Corroborating these characteristics, the principals in this research emphasized achievement, frequently evaluated student progress in classrooms, supported and reinforced teachers' and students' performance. As McIntyre and Morris

(1982) concluded their article, it would be unrealistic to assume that the principals would ever be in a position to give instructional improvement their number one priority. Nevertheless, a growing body of research shows a positive relationship between the leadership ability of principals and student growth in basic skill achievement. This means that if principals can improve their skills in and if their leadership efforts focus on the characteristics of effective teaching, as the two principals in this research did, one can anticipate more successful schools.

As stated before, behavior modification has been contributing toward making educational systems more effective and satisfying to students and school personnel (Sulzer-Azaroff, 1987). The field of OBM, representing the behavior modification, not only helps us understand behavior, it also gives us effective tools to managing it, such as goal setting, performance feedback, positive reinforcement, and behavior based training strategies. The OBM procedures implemented in this research corroborate findings of several other studies reported previously (Kim and Hammer, 1976; Ivancic et al., 1981; Panyan, Boozer and Morris, 1970; Quilitch, 1975; Riley and Frederiksen, 1984; Sulzer-Azaroff, 1984). The results of this research and other studies seem to make clear that feedback and goal setting interventions can result in increases in desired

process behaviors and organizationally relevant outcomes. As mentioned before, these results shows remarkable consistency in terms of being the best approach for changing behavior and performance, and is important especially because of the applicability issue.

Factors and Issues That may Have Affected the Results

As mentioned previously, the results indicate that OBM procedures appeared to influence students' academic performance. Two factors may have affected the results. First, the principals' visits in the classrooms - usually, teachers and students are unused to frequent visits by the principal. The dramatic intentional increase in principals' involvement, due to the characteristics of OBM procedures, may possibly have influenced the students (and the teachers, as well). The researcher sees this factor as positive, in terms of the principals' roles as instructional leaders. Second, the self-recording forms, introduced to students in the second experiment, may have provided an additional pressure on students to achieve their goals. The students' involvement in the research became more active, through the self-recorded forms, as a resource to receive the positive reinforcement. As an instrument for educating students toward greater self-control and self-management, the self-recording system can be effective.

An increase in Principal A's and Teacher 2's rates of non-verbal feedback and verbal praise was demonstrated. Their improvements were greater for verbal praise than non-verbal feedback. Various explanations of this finding can be suggested: a) it is more difficult to change non-verbal behavior than verbal behavior; b) it is more difficult to give feedback and praise for the use of non-verbal feedback because the former is more difficult to observe. Another explanation for the smaller effect of the interventions on non-verbal feedback may lie in the observation procedures. It is possible that the observers marked a verbal praise statement more readily and did not score non- verbal praise when it was accompanied by verbal praise. That is, the increased verbal praise may have masked the increased non- verbal feedback because the former is more readily discernible.

Cost-benefit Analysis of OBM Procedures

A cost-benefit analysis of the OBM procedures described in this research reveals promising results. In terms of costs, in order to have the principals, and teachers use goal setting, feedback and praise, several OBM training workshops must be conducted. The first one or two workshops a professional OBM instructor, the school psychologist or counselor, or an outsider consultant (and this can be done as a typical teacher training workshop) but, later on, the

strength of the training, from a cost view point, lies in the principals' participation in maintenance of the skills learned in the workshops. The principals are always housed in the school and the maintenance procedures take little of the principals' time and can be accomplished whenever the principals has a few free minutes. The minimal time commitment by the principals for this instructional leadership function is cost-justified since measurable teacher behavior change and especially student academic increased performance can be demonstrated, after using the OBM procedures.

Indirect Benefits of Principal Participation in OBM Procedures

The advantages of principals' involvement in the OBM training and procedures go beyond issues of cost and convenience. Both principals in the research reported benefits from their participation - unrelated to the improvement of teacher's use of feedback, praise and goal setting or students' academic performance. The principals found that their participation increased their knowledge of the children, the curriculum, the classroom environment, and various aspects of teacher behavior. Both principals expressed the opinion that it was important for students and teachers to see the principal in environments other than the principal's office. By visiting the classrooms, the principals showed their interest and involvement in

activities of the teachers and the students. The teachers expressed the opinion that it was important for the principal to see what particular children were like in classroom situations so that the principal would understand the difficulty of dealing with them. The students showed curiosity and maybe a little surprise (which may, as well, have influenced or affected some of the results) but, again, their increased academic performance has demonstrated the importance of the principals' involvement in the classroom and their application of OBM procedures.

Future Applications and Implications

As mentioned earlier, teacher 2 decided to apply some of the OBM procedures to her other classes and begun planning to continue to record students' performance in reading throughout the year. She intends to use original standardized reading test results to compare this year's results with those of previous years. This teacher is part of a team and she plans to convey the results of this research at one of the team's meetings. Were the principal to be involved in this particular team, and others, implementation of OBM procedures in many other subjects, could be promoted within a broader range of the school activities. Yet, academic performance is only one aspect of this program - a variety of many other dimensions can benefit from the OBM implementation such as health and

safety, classroom management, social behaviors, and so on. Moreover, this can be expanded to include other staff. The strength of the program lies in the principal's willingness to be an effective instructional leader.

As part of the principals' participation in such an undertaking, OBM training sessions may be needed. As mentioned previously, the time commitment from the principal and from teachers for these sessions is minimal while the subsequent behavior changes in the staff, should more than compensate for this initial investment. It will be appropriate at this time however, to warn that these novel methods maybe threatening to staff initially, as any new method of supervision might be. For instance, the principal's involvement in an OBM training session plus her/his observing and direct involvement in classrooms, may make teachers uncomfortable, because teachers and principals are unused to such an involvement. As discussed in Chapter II in the review of the literature, principals tend to observe classrooms once or twice a year, for a formal critique or evaluation. Some teachers might feel threatened by more a frequent observations and involvement by the principal and the principal may feel more comfortable remaining in the office. In order to change these habits and attitudes, further explanation is needed and a clear vision of all the eventual possibilities and benefits for the staff and administration must be provided.

More research emphasis is needed on training principals in behavioral observational procedures, in setting goals and in delivering appropriate feedback and reinforcement. This study demonstrated the usefulness of these OBM procedures but it did not focus on investigating training methods for principals and teachers. Future research could address this issue.

The present research is an initial inquiry into promoting the effectiveness of the principal as an instructional leader of staff and students. Further research on this topic is needed. The present results indicated that two principals in two different schools (in two different environments - geographically and by level), could influence the academic performance of students and improve the teaching skills of their staff by using brief, simple procedures. Implementation of the OBM procedures by other principals, in other schools is necessary, to document the general effectiveness of these procedures. It would be important also to investigate a wide variety of possible academic subjects within the school system, on which the strategies mentioned above can be applied. Future studies should attempt to examine the effectiveness of training programs for principals and teachers, based upon the changes in the teachers' and students' behavior and performance.

A Personal Statement

As mentioned in the review of literature, when discussing the achievements of behavior analysis and the needs of education, Sulzer-Azaroff (1986) emphasized factors that may prevent acceptance of behavioral methods, among them misinformation about the advantages of behavioral strategies and a lack of sufficient skills to implement them successfully. In the present research several discussions were held with the two principals in this study, with teacher 2 - before, during and, after the OBM training sessions. Needless to say, these issues of acceptability arose in these discussions. The success of this research was not only in its results, but in the change of participants' feelings, attitudes and behaviors. They expressed their satisfaction both in words and especially in practical ways. For instance, the fact that the principals left their offices, in which many administrative duties remained, to observe and to promote academic performance of students, and that the teachers were willing to take "risks" and to introduce new teaching strategies to improve students' performance, provided convincing evidence of their positive attitudes toward the new methods. This brings immense satisfaction to this researcher. Over the 14 years of experience this researcher has had as a teacher, principal, and superintendent of schools, he has seen many changes in

educational approaches. The results of this present academic research emphasize even more the potential value of using procedures in educational settings. Much work needs to be done, to teach and to learn the proper skills and to convey the information and the benefits of these successful approaches. The best ambassadors for this important task are those who are willing to accept the "risks", while they struggle toward achieving effectiveness.

APPENDICES

APPENDIX A

OBSERVATIONAL FORM FOR PRINCIPAL A

N A M E _____ D A T E _____

LIST OF PRINCIPAL'S BEHAVIORS

1. P r i n c i p a l' s F e e d b a c k:

a) verbal remarks on the performance	that's good!	|__|__|__|__|__|
	terrific job!	|__|__|__|__|__|
	excellent!	|__|__|__|__|__|
	very good!	|__|__|__|__|__|
	you work hard!	|__|__|__|__|__|
b) "physical" contact with the student	smile	|__|__|__|__|__|
	nod	|__|__|__|__|__|
	shake hand	|__|__|__|__|__|
	eye contact	|__|__|__|__|__|
	pat on the shoulder	|__|__|__|__|__|

2. P r i n c i p a l' s G o a l S e t t i n g:

a) asks student what s/he thinks s/he can do for next time;	|__|__|__|__|__|
b) give praise for student's decision/suggestion;	|__|__|__|__|__|
c) suggest a goal to the student for next time;	|__|__|__|__|__|
d) inform student about the goal to be achieved by the time agreed upon under (a)	|__|__|__|__|__|

OBSERVATIONAL FORM FOR TEACHER 2

N A M E _____ D A T E _____

LIST OF TEACHER'S BEHAVIORS

1. T e a c h e r ' s F e e d b a c k:

a) verbal remarks on the performance	that's good!	|__|__|__|__|__|__|
	terrific job!	|__|__|__|__|__|__|
	excellent!	|__|__|__|__|__|__|
	very good!	|__|__|__|__|__|__|
	you work hard!	|__|__|__|__|__|__|
b) "physical" contact with the student	smile	|__|__|__|__|__|__|
	nod	|__|__|__|__|__|__|
	shake hand	|__|__|__|__|__|__|
	eye contact	|__|__|__|__|__|__|
	pat on the shoulder	|__|__|__|__|__|__|

2. T e a c h e r ' s G o a l S e t t i n g:

a) asks student what s/he thinks s/he can do for next time;	|__|__|__|__|__|__|
b) give praise for student's decision/suggestion;	|__|__|__|__|__|__|
c) suggest a goal to the student for next time;	|__|__|__|__|__|__|
d) inform student about the goal to be achieved by the time agreed upon under (a)	|__|__|__|__|__|__|

OBSERVATIONAL FORM FOR STUDENTS

OBSERVER'S NAME _____ DATE _____

	Silent reading						
0.30_							
1____							
1.30_							
2____							
2.30_							
3____							
3.30_							
4____							
4.30_							
5____							
5.30_							
6____							
6.30_							
7 ____							
7.30_							

	Silent reading						
8____							
8.30_							
9____							
9.30_							
10____							
10.30_							
11____							
11.30_							
12____							
12.30_							
13____							
13.30_							
14____							
14.30_							

APPENDIX B

WORKSHOP: OBSERVING AND RECORDING BEHAVIOR

I. EVENT RECORDING.

Tally the behavior you have selected for each 1-minute period:

Minute	Tally
1	
2	
3	
4	
5	

II. INTERVAL RECORDING (PARTIAL)

In the space provided, enter + if the behavior occurred. Enter 0 if the behavior did not occur. NOTE: The behavior is scored only once in each interval and if it continues into the next interval it should be scored again.

Minute	sec 0-15	sec 15-30	sec 30-45	sec 45-60
1				
2				
3				
4				

III. MOMENTARY TIME SAMPLING.

Enter + if the behavior is occurring at the end of the interval. Enter 0 if no.

Minute	sec 0-15	sec 15-30	sec 30-45	sec 45-60
1				
2				

APPENDIX C

WALL-CHARTS

APPENDIX D

SELF-RECORDING FORM FOR STUDENTS IN EXPERIMENT II

Name _____ Date _____

WEEKLY CHART: "ON-TASK" BEHAVIORS.

Assignment / Day	On time for class	Have all the equipment			# of pages. read	
		pen/pencil	book	folder	class	home
MONDAY						
TUESDAY						
WEDNESDAY						
THURSDAY						
FRIDAY						

APPENDIX E

LETTER TO STUDENTS' PARENTS IN EXPERIMENT II

December 16, 1988

Dear Parent,

One of my goals for the students in my reading classes is to increase the amount of time they read. The reason for this goal is that research indicates that the amount of time students read is directly related to their progress in reading. The more a person reads, the better he/she becomes at reading.

To help increase student's reading practice, I am recording the minutes each student reads during his/her free time. I have been doing this for five weeks and I would like to report to you the total amount of time your son/daughter read during this marking period. I hope you will talk about it with your son/daughter and encourage him/her to practice reading daily and complete the homework assignment.

Your son/daughter, has read a total of minutes or hours and minutes.

Thank you for your help and concern. Please call me if you have any questions.

Sincerely yours,

Reading Teacher, Chapter I

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